

# Building Trust through an Equitable and Inclusive Energy Transition

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# Preface

Equity, justice and inclusivity are key pillars of the global landscape that represent a primary concern for stakeholders worldwide, including governments, businesses, communities and citizens. These dimensions transcend geographical boundaries, play pivotal roles within the broader economic and social systemic context where the energy system operates and have far-reaching consequences across diverse systems. Energy powers societies and economies, and the smooth operation of the energy system is vital for individuals, companies and nations, all of whom depend on uninterrupted, affordable access to energy.

As the world grapples with interconnected crises, turbulence in energy markets and shifting geopolitical priorities, the intricate interplay between energy prices, macroeconomic and social stability, and the role of individuals in the energy transition becomes increasingly evident. Equity, justice and inclusivity emerge as critical components to accelerate an effective energy transition, whether at the individual, local, national or global levels.

The World Economic Forum uses the energy triangle framework, highlighting three core dimensions of a balanced energy system: sustainability, security and equity. While energy security and environmental issues are important, this report focuses on the crucial yet often overlooked aspects of energy equity, justice and inclusivity. Despite increasing awareness, these dimensions face mounting pressure, especially in a turbulent period where energy security and sustainability are prioritized and better understood. Nonetheless, overlooking equity, justice and inclusivity poses a significant risk to the energy transition, which the world cannot afford, given energy's key role in enabling global economic and social development.

This report aims to underscore the importance of a just, equitable and inclusive energy transition while highlighting the potential adverse impacts of disregarding these aspects. It emphasizes the need to tackle affordability and access issues, identifies emerging signs of inequality, and explores the underlying challenges in realizing such a transition. The report also explores stakeholder interactions, divergences and critical questions demanding decision-makers' attention. Furthermore, it proposes actionable measures to advance an orderly, people-centred and socially responsible energy transition that bridges divides and builds trust.

Addressing these issues demands unprecedented collaboration, both between and within countries. While governments hold the primary responsibility for steering their countries towards a just, equitable and inclusive energy transition, businesses also play a crucial role and can benefit from taking action. Solving these issues in isolation by any single company, industry sector, or stakeholder group is insufficient. The call to action necessitates urgent and effective integration of the "justice, equity and inclusivity" dimension to accelerate the transition.

One key reason the energy transition has not advanced at the necessary pace and scale is the oversimplification of the narrative, primarily focusing on the supply side to transition from fossil fuels to renewables. In reality, the transition is far more complex, and ignoring its multifaceted nature jeopardizes overall progress. This report offers an approach to facilitate common ground and mobilize coordinated stakeholder action at speed and scale, charting a more direct path towards a balanced energy future for all.

# Executive summary

Building equity and inclusivity more strongly into the business and economic case can accelerate the energy transition, unlocking full benefits for individuals and communities.

Equity and inclusivity, alongside sustainability and security, are key to a successful energy transition. The energy transition creates new jobs, improves livelihoods and empowers individuals, communities and societies. However, neglecting equity and inclusivity in this transition can cause delays or even lead to its failure, making it crucial to address these aspects at local, national and global levels. Recent challenges in the global energy landscape have led to severe price shocks and worsened energy poverty, disproportionately affecting low-income countries and households. Consequently, many governments have prioritized immediate energy security, inadvertently putting equity and inclusivity considerations under pressure.

Energy equity and inclusivity encompass various dimensions within and across nations and stakeholders. The lack of affordable access to modern and clean energy remains a significant concern in many countries. Transitioning to cleaner energy systems, whether in advanced or developing nations, requires policy changes and infrastructure investments. Despite the strong economic case, complications often arise from misinformation or concerns among constituents who may be negatively affected by changes, leading to community-level resistance. Additionally, there is a risk of a growing North-South divide in access to clean energy investments and technologies, often accompanied by mistrust and uncertainty regarding the benefits of government policies and business actions.

As the energy transition reaches a pivotal point, prioritizing equity, justice and inclusivity is essential to fostering global collaboration and achieving a balanced and rapid transition. Overlooking these aspects could erode trust, impede necessary business investments, lead to a loss of social licence, undermine societal well-being and ultimately jeopardize the entire energy transition.

Understanding the complex dynamics at play is crucial to navigating the path forward.

In today's evolving global economy, addressing the potential negative consequences of an unequal energy transition is important. Key stakeholders, including governments, businesses, communities and citizens, shape this transition, and their interactions can either facilitate cooperation or create divergences that hinder trust and collaboration. While aligning stakeholders around common objectives is crucial, acknowledging the need for trade-offs is equally important. A fair and effective transition requires consideration of equity in the distribution of costs and opportunities, with particular attention to those at risk of losing out.

Moving forward, a multidimensional approach is needed, considering each nation's unique circumstances and starting points. Key questions must be addressed, including integrating a "people and community positive" approach to energy infrastructure projects' planning and execution, identifying effective energy regulatory and fiscal measures that drive the transition while addressing the needs of vulnerable individuals and building trust and collaboration among diverse stakeholders at all levels.

Fostering a just, equitable and inclusive energy transition is not solely an environmental concern but also a social, economic and geopolitical necessity. Failing to address socioeconomic impacts poses substantial risks to the entire transition, while success can drive business opportunity, socioeconomic development and resilience. This report underscores the urgency and importance of such a transition, identifies signs of inequality and proposes solutions to bridge gaps, reduce uncertainties and build trust in a transition that safeguards vulnerable populations and ensures inclusivity for all.

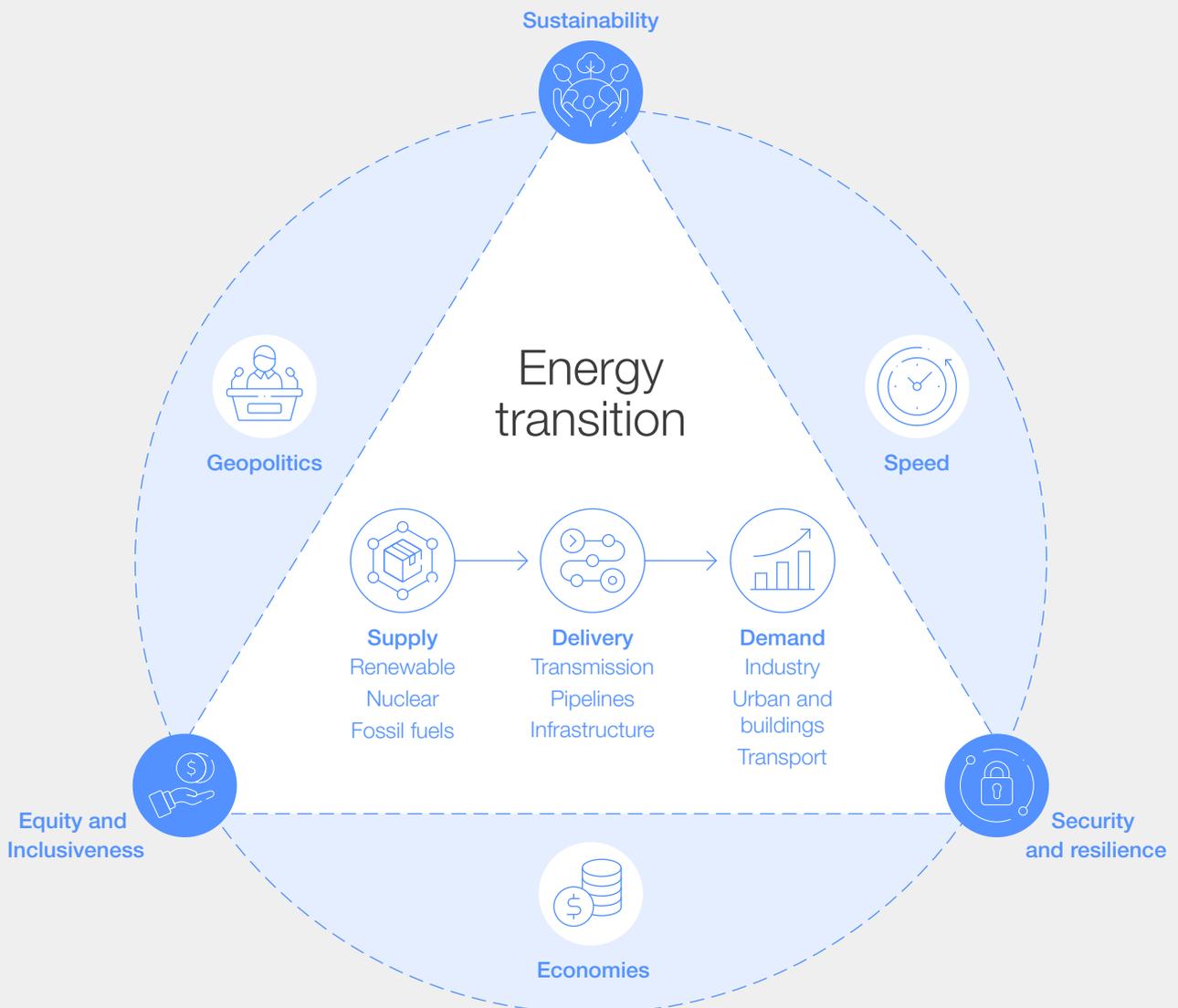
# Introduction

Despite recent challenges, equity and inclusivity, alongside security and sustainability, remain integral elements of a successful energy transition.

Reliable and affordable access to progressive energy is essential for people and economies, especially as global populations grow, driving increased demand for the benefits that energy offers. Decision-makers broadly agree on the importance of renewable energy, energy efficiency and decentralized solutions to improve energy access. Simultaneously, there is an urgent need to

transition to energy systems that are more efficient and emit significantly less greenhouse gases (GHG) to avoid the worst impacts of climate change on people and the planet. Achieving a sustainable energy future must go hand in hand with delivering on energy security and resilience, and equity and inclusivity. These elements together form the core of the energy triangle (see Figure 1).

FIGURE 1 The energy triangle



“ Geopolitical and energy crises have pushed around 120 million people into extreme poverty, a number that could rise to 132 million by 2030.

The World Economic Forum's latest [Fostering Effective Energy Transition](#) report highlights that despite a decade of progress, the global energy transition has plateaued in recent years due to increasing challenges to energy equity. Geopolitical and energy crises have pushed around 120 million people into extreme poverty,<sup>1</sup> a number that could rise to 132 million by 2030.<sup>2</sup> Even those not in extreme poverty face serious energy affordability issues due to surging energy prices. Approximately 75 million people who recently gained access to electricity may lose the ability to pay for it, and around 100 million may revert to using traditional biomass for cooking.<sup>3</sup> In the United States alone, 25% of households (30.6 million) struggle with high energy burdens,<sup>4</sup> with low-income households experiencing energy burdens that are 3.5 times higher than the average. Consequently, many individuals are forced to make difficult choices, often foregoing other essentials to maintain uninterrupted access to energy.<sup>5</sup>

While clean energy spending has increased in recent years, it remains concentrated in a few countries and sectors. Since 2021, over 90% of clean energy investment growth has occurred in advanced economies and China. Although countries like India, Brazil and parts of the Middle East have seen an increase in clean energy investments and projects, progress has been slower in many other emerging and developing economies, particularly in investments aimed at expanding and modernizing grids. Factors such as higher interest rates and capital costs, unclear policy frameworks, and financial challenges for utilities exacerbate these disparities and deter much-needed investments.<sup>6</sup>

The current reliance on emissions-intensive energy sources is driven by cost-effectiveness, reliability

and established infrastructure, making their replacement with cleaner alternatives costly and technologically challenging. Some clean energy solutions often involve higher upfront construction costs per unit of new energy capacity and require new infrastructure and land use, impacting local areas. While transitioning to cleaner energy offers security and growth opportunities, it can also introduce substantial costs for individuals and companies, particularly in emerging and developing economies, raising complex questions about the distribution of the transition's benefits and the allocation of costs and responsibilities. Adding to this complexity are the historical contributions of the Global North to climate change and the growing energy needs of the Global South, which is striving to develop economically and meet energy demand while navigating the transition with limited financial resources and higher costs of capital than the Global North.

Energy inequality is a long-standing issue that has now reached a critical juncture. Disparities in income, wealth and well-being, driven by unequal opportunities, have marginalized a significant portion of the population, leading to disillusionment. The spread of misinformation, increasing polarization over climate and energy transition policies, and growing community-level resistance to externally imposed changes and clean energy infrastructure projects further complicate matters, eroding trust in government and business approaches to accelerate the energy transition.

These factors make it challenging for companies to plan and invest effectively, potentially slowing down the energy transition and hindering the achievement of climate goals, significantly adding to economic, social and environmental costs.



**A delayed transition is estimated to be 20% more expensive than a gradual transition, and \$7.7 trillion more expensive than an accelerated pathway, with four times higher CO<sub>2</sub> emissions.**

Wouters, F and A. van Wijk, [Speed, the Forgotten Cost Reduction Factor in the Energy Transition](#), Renewable Energy Institute, 2022.

In the coming decades, delays in the energy transition are not an option if the world is to meet its decarbonization objectives. However, it is crucial to realize that decarbonization is just one aspect of the broader energy transition that requires attention. The COP28 meeting has introduced the “Global Renewables and Energy Efficiency Pledge”, which calls for tripling the rate of renewables expansion and doubling the rate of energy efficiency by 2030 as a crucial step in limiting global warming to 1.5°C.<sup>7</sup> Achieving this ambitious goal will undoubtedly require considering equity and inclusivity aspects to unlock the necessary investments and promote consumer adoption.

Countries, despite their different starting points and transition pathways, will undergo a substantial transformation in both their energy systems and societies, leading to significant socioeconomic impacts. If not managed properly, it will create

winners and losers – the winners will benefit from cost-effective and clean energy sources, reduced emissions and employment and innovation opportunities, while losers will bear the burdens of the transition, such as high costs, job losses or limited access to opportunities.<sup>8</sup> To bridge these gaps and ensure an orderly, smooth and successful transition for society, it is essential to boost collaboration and prioritize early actions that make the benefits of the energy transition accessible to all, securing broad-based acceptance of these changes.

**A just, equitable and inclusive energy transition is not only a moral imperative; it is a social, economic, environmental and geopolitical necessity. Neglecting to place people at the core of this accelerated and scaled-up effort risks eroding the trust necessary for a stable and secure future and jeopardizes the entire energy transition.**

# Understanding a just, equitable and inclusive energy transition

A fair and socially responsible energy transition requires a nuanced approach that balances the interplay of justice, equity and inclusivity principles.

“ Three fundamental aspects of fairness must be maintained throughout the energy transition process: distributional, procedural and recognitional justice.

In recent years, the phrase “leaving no one behind” has gained prominence in discussions related to the energy transition. While this reflects a growing recognition that the energy transition must extend beyond technology, climate and cost considerations to prioritize socio-economic aspects,<sup>9</sup> it also highlights a fundamental challenge. The terms “just”, “equitable” and “inclusive” energy transition are often used interchangeably, yet they each carry unique emphasis and implications despite sharing common goals and principles. At the outset, it is imperative to acknowledge the starting point – a landscape marked by significant injustices – and the call to “leave no one behind” underscores the critical need to avoid perpetuating existing disparities. **Although the taxonomy surrounding these concepts is evolving and requires further refinement, it is important to understand that the pursuit of a just transition invariably centres on the core principles of equity and inclusivity.**

In 2015, the International Labour Organization defined a just transition as “greening the economy in a way that is as fair and inclusive as possible to everyone concerned, creating decent work opportunities and leaving no one behind”.<sup>10</sup> At a local level, achieving a just transition means avoiding the creation of new sources of emissions lock-in and increased dependence of small- and medium-sized enterprises (SMEs) and public revenue on emission-intensive industries. Additionally, it involves acknowledging and addressing existing inequities and environmental legacies often left behind by these industries.<sup>11</sup>

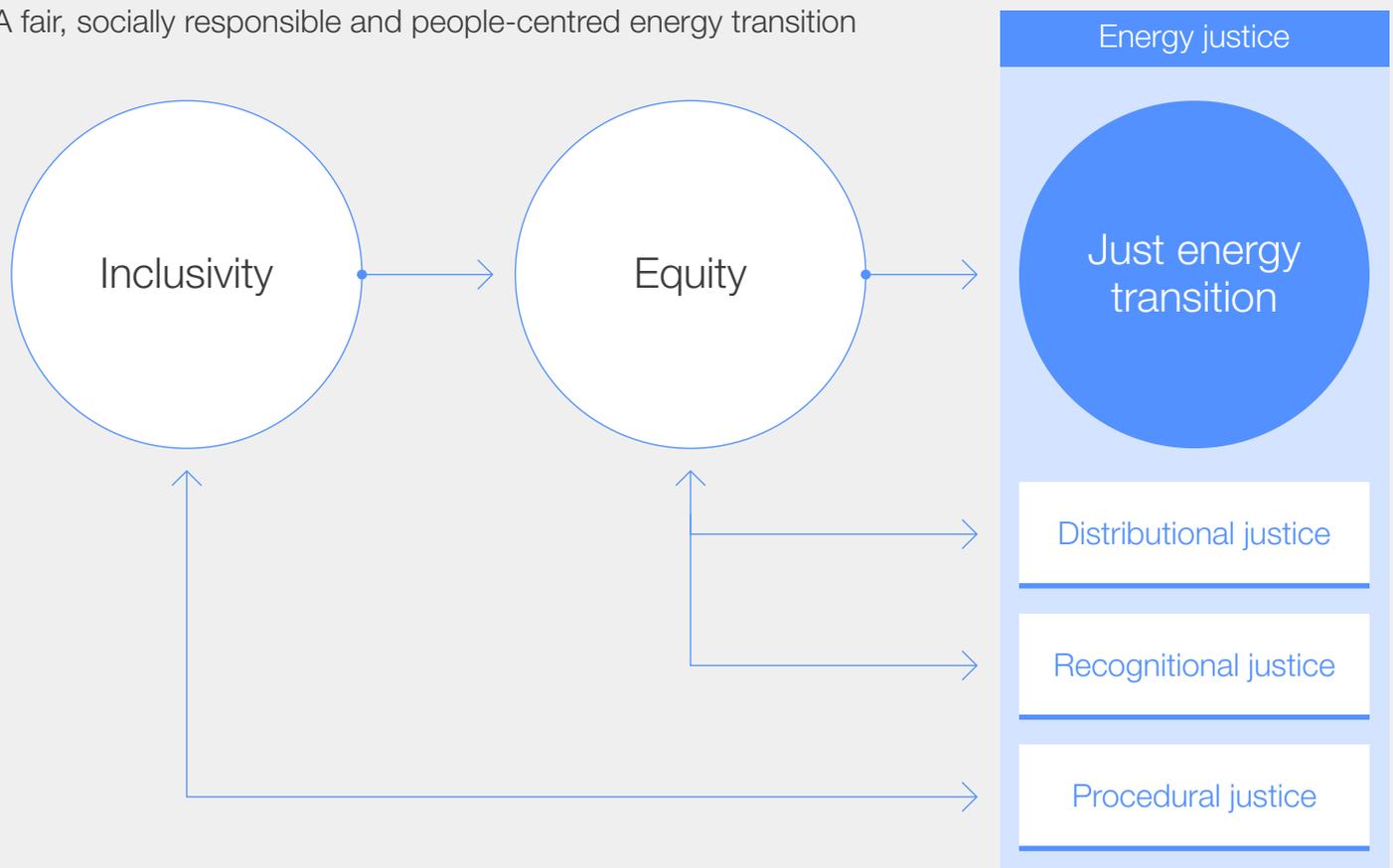
Within the energy justice framework, where “just transition” is a subset, three fundamental aspects of fairness must be maintained throughout the energy transition process: distributional, procedural and recognitional justice. Distributional justice aims to

ensure fair outcomes in resource allocation, cost distribution and benefit sharing. Procedural justice emphasizes fair representation and inclusivity in decision-making within the energy system, while recognitional justice acknowledges and seeks to rectify past harms or wrongs.<sup>12</sup> Although the concept of “energy justice” may manifest differently for different stakeholders at the local, national or even international levels between nations, the overarching principle is the critical need to avoid leaving behind those still reliant on unabated fossil fuels, whether on the demand or supply sides.

In this context, distributional and recognitional justice converge into the concept of energy equity. This entails affordable access to modern and clean forms of energy for all, supporting the continuity of economic development<sup>13</sup> and ensuring that the benefits and opportunities of transitioning to a sustainable and clean energy system are accessible to and shared among all segments of society.<sup>14</sup> Addressing existing inequalities is integral to this process. Equity efforts often prioritize preventing historically marginalized or vulnerable communities from bearing a disproportionate burden of negative impacts. This extends to aspects such as the cost of energy for consumers or the transition of jobs related to energy sectors and infrastructure.

The element of procedural justice aligns with the concept of inclusivity and emphasizes the active participation and representation of all stakeholders, regardless of their backgrounds, in decision-making processes related to the energy transition.<sup>15</sup> It aims to create opportunities for meaningful stakeholder engagement, ensuring that diverse voices and perspectives are not only heard but also integrated into energy system planning, policy development and the inclusive development of all within planetary boundaries (see Figure 2).

A fair, socially responsible and people-centred energy transition



The utilization of these interconnected principles varies by region and is shaped by current priorities, historical contexts and the specific challenges and conditions within each region’s unique energy transition journey. In North America and Europe, the focus is mainly on addressing historical disparities in environmental burdens and implementing programmes and policies to promote social welfare while transitioning workers away from coal and decarbonizing the energy sector. In Latin America and the Caribbean, the just transition concept has gained traction in recent years and is being endorsed by trade unions and environmental and social organizations to ensure a fair shift towards a climate-neutral economy that benefits all.<sup>16</sup>

In Asia, countries grapple with the challenge of balancing growing populations, industrialization and energy demand with social and environmental responsibilities. The region’s focus is on leveraging the energy transition to foster economic development, raise living standards, enhance energy security, reduce electricity costs and improve energy accessibility.<sup>17</sup> Sub-Saharan Africa’s primary focus

is on expanding energy access to remote and underserved communities through clean energy initiatives, driving economic development and alleviating energy poverty. In the Middle East and North Africa, low-income countries typically prioritize ensuring affordable energy access, while high-income countries engage in discussions centred on addressing economic implications, deploying energy reforms and creating new economic opportunities. They also aim to mitigate the social and economic impacts associated with diversifying the energy mix.

The pursuit of a “just, equitable and inclusive energy transition” demands a nuanced approach that recognizes the interplay between these taxonomies. While it is essential to define each term for clarity, consistency and shared understanding, a narrow prioritization of one concept could lead to unintended consequences or exacerbate disparities in other areas. The significance lies in integrating all three concepts to advance a fair and socially responsible energy transition that benefits everyone while minimizing adverse impacts on the most vulnerable populations.

## BOX 1 | ASEAN<sup>18</sup> leaders shared just transition principles

The ASEAN region is at a pivotal point as it grapples with transitioning its energy sector against the backdrop of a rapidly expanding population, expected to exceed 700 million by 2030 with an annual growth rate of 3% and rising energy demand. Recognizing this challenge, the World Economic Forum established the ASEAN Leaders for Just Energy Transition (JET), a community of South-East Asian business leaders whose vision is to ensure an equitable and reliable energy transition driven by investments in clean energy, supportive policies, and knowledge exchange within the region.

Despite making notable progress, ASEAN's Energy Transition Index scores slightly lag behind the global average, primarily due to a decline in the "sustainability" dimension. The JET community recognizes key challenges such as securing financing for clean energy, developing new power infrastructure to meet growing demand and decarbonizing energy systems while ensuring affordability. In response, the community crafted "[shared aspirations](#)", which encapsulate

their principles and mission, emphasizing the importance of collaboration in fostering understanding among diverse stakeholders and underscoring the mission's significance.

Advancing a just, equitable and inclusive energy transition in ASEAN requires concerted efforts in four key areas: 1) mobilizing funds for clean energy projects through public-private partnerships and international cooperation, 2) promoting regional collaboration to enable cross-border energy trading and regional infrastructure development, 3) aligning energy policies and regulations across nations to support clean energy development, and 4) providing opportunities to minimize the socioeconomic impacts on vulnerable communities.

The ASEAN JET Leaders have embarked on a transformative mission to drive a rapid, just and inclusive energy transition in the region. Through collaboration and innovation, they aspire to set a global example for what can be achieved when diverse stakeholders come together to address complex challenges and drive positive change.



2

# Recognizing symptoms of an unjust, inequitable and non-inclusive transition

Emerging signs of an uneven energy transition reveal the crucial need for strategic policy adjustments and financial reallocations.

In an evolving global economy, countries must progress their energy transition at distinct paces and tailor it to their specific circumstances. This approach is critical for avoiding potential short-term disruptions that could offset long-term gains. However, it is evident

that the consequences and symptoms of an unequal transition are being felt on a global scale, albeit at various points and in varying ways.<sup>19</sup> Below, the symptoms of an unjust, inequitable and non-inclusive energy transition are summarized (see Table 1):

TABLE 1 Emerging symptoms of an unequal transition

<p><b>Energy access</b></p>	<ul style="list-style-type: none"> <li>– Recent progress towards universal energy access by 2030 has been uneven and insufficient, particularly in developing countries and poor and remote communities, leading to an overall increase in energy poverty.</li> <li>– Over 775 million people still lack access to electricity (with about 600 million in Sub-Saharan Africa),<sup>20</sup> while 2.3 billion lack access to clean cooking facilities.<sup>21</sup></li> <li>– At the current rate of progress, the world will reach only 92% of electrification by 2030, with large parts of Sub-Saharan Africa remaining without electricity access.<sup>22</sup></li> </ul>
<p><b>Energy prices</b></p>	<ul style="list-style-type: none"> <li>– The combination of policies partially overlooking socioeconomic considerations, recent energy crises, geopolitical tensions and a heavy reliance on volatile fossil fuels has led to soaring energy prices in many countries, impacting affordability, particularly for low-income households. Electricity costs increased by almost 30% in 2022, mainly due to record-high natural gas prices.<sup>23</sup></li> <li>– High fuel and electricity costs impact the competitiveness of energy-intensive industries.</li> <li>– Some governments implement fiscal responses to mitigate higher energy costs for low-income households, but these measures impose heavy debt burdens and reduce incentives for efficient energy use.</li> </ul>
<p><b>Energy investment</b></p>	<ul style="list-style-type: none"> <li>– Disparities in financing and contributions between developed and developing countries significantly impact certain regions (emerging and developing economies, except China, account for only 5% of global public energy R&amp;D funding, 3% of corporate energy R&amp;D funding and 5% of energy venture capital funding).<sup>24</sup></li> <li>– Annual investments of around \$35 billion have the potential to provide electricity access for people currently without it.<sup>25</sup> In addition, achieving universal access to clean cooking requires an annual investment of \$8 billion for stoves and infrastructure until 2030. This is less than 1% of what governments spent globally in 2022 to make energy affordable for citizens.<sup>26</sup></li> <li>– Developing countries face multiple crises, resulting in high borrowing costs and debt servicing expenses, reducing their ability to invest in the energy transition.</li> <li>– Financial burdens of climate adaptation and mitigation on countries that have made minimal contributions to the climate problem but suffer the most from its impacts. The adaptation finance gap is widening and is estimated at \$194-366 billion per year, while the needs of developing countries are 10-18 times as great as current international public finance flows.<sup>27</sup></li> <li>– Capital costs for renewable energy projects in emerging and developing economies remain at least double those in advanced economies.<sup>28</sup></li> </ul>

TABLE 1 | Emerging symptoms of an unequal transition (continued)

Trade	<ul style="list-style-type: none"> <li>– Rising protectionism, including high tariffs and duties, favours local production but threatens global competitiveness and the technological potential of the energy transition.</li> <li>– Permitting issues leading to challenges in securing access to and approval of new transmission lines, developing new renewable energy projects and their interconnection to the grid.<sup>29</sup></li> </ul>
Technology	<ul style="list-style-type: none"> <li>– Stricter controls on critical technologies in some advanced economies limit access and transfer to the developing economies that need them.</li> <li>– Technology is not agnostic; instead, it reflects and sustains the values, assumptions and power dynamics of the society where it is developed and employed.<sup>30</sup> This leads to a preference for specific technologies that may not equally benefit all stakeholders.</li> </ul>
Jobs	<ul style="list-style-type: none"> <li>– While new opportunities are emerging in renewable energy, energy efficiency and digital solutions in the energy sector, job creation and displacement are happening simultaneously, affecting different worker groups and often leaving those in incumbent industries without immediate employment options.</li> <li>– Incumbent industries, such as fossil fuels, employ over 32 million globally, and while some companies are reskilling and transitioning workers internally to low-carbon sectors to retain talent, this is not an option everywhere.<sup>31</sup></li> <li>– Women’s representation in the energy workforce is consistently low when compared to economy-wide averages, with less than 15% employed in senior management positions.<sup>32</sup></li> <li>– Many coal industry employees are miners, whose jobs are geographically concentrated, leaving them especially vulnerable during the transition.</li> </ul>
Political	<ul style="list-style-type: none"> <li>– Some advanced economies’ governments are reconsidering critical energy transition commitments, which could create uncertainty for businesses, potentially impacting job prospects, investments and the speed of transition to cleaner energy systems.<sup>33</sup></li> <li>– Lack of social acceptance, including community opposition to renewable energy or infrastructure deployment and push from the Global South to prioritize the ethical use of domestic fossil fuel resources for addressing developmental issues before transitioning to alternative energy sources.</li> </ul>
Environmental	<ul style="list-style-type: none"> <li>– A slower energy transition exacerbates climate events and greenhouse gas emissions, disproportionately affecting vulnerable populations and leading to imbalances in the biodiversity and health of these ecosystems.</li> </ul>

**Note:** These symptoms can occur in some instances and geographies but should not be interpreted as a general assessment across all countries.

These symptoms arise mainly from the interplay between regulations, political commitments and investment and capital allocation decisions made by both public and private sectors. For instance, issues related to energy access and pricing stem from inadequate policies that do not account for or address impacts such as service interruptions or price fluctuations and limited or misdirected financial

solutions that do not help resource-constrained developing countries. To address these issues, it is essential to consider where financial resources should be directed to have the greatest impact. Recognizing these complex interdependencies in the decision-making process of the energy transition is crucial for achieving a just, equitable and inclusive outcome.



3

# Diagnosing the underlying challenges

Navigating the energy transition’s complexities demands addressing stakeholder divergences and answering critical questions for equitable and inclusive progress.

## 3.1 Stakeholder interactions and divergences

“ Building trust requires proactive measures to bring stakeholders together around a common vision and shared objectives.

An important aspect of the energy transition involves acknowledging that without deliberate efforts to ensure a just, equitable and inclusive process, there is a risk of unequal benefits and exclusion of certain groups. While many current policies emphasize the importance of these principles, there is a need to gain a deeper understanding of the extent of inequities and challenges associated with the energy transition and identify the stakeholders<sup>34</sup> who, despite their unique interests and roles, must collaborate to push it forward.<sup>35</sup>

**Governments** play a central role in policy-making, steering the transition to be “just, inclusive and equitable – with people’s needs at its centre”.<sup>36</sup> Engagement or consultation approaches, which consider procedural justice, are fundamental to ensuring legitimacy (or perceived legitimacy). Integrating these considerations helps governments garner the public support needed to expedite the energy transition, whether that involves backing specific energy projects, implementing essential policy changes or driving consumer adoption.

**Businesses** also play a key role in mobilizing capital for affordable and effective energy solutions, contributing to sustainability and social equity.<sup>37</sup> Their support instils confidence in government policies and creates opportunities.<sup>38</sup> Embracing an inclusive and “people-positive” approach benefits businesses by reducing local opposition, preventing costly delays, attracting talent, leveraging community expertise and facilitating faster action and investments.

**Communities and citizens** directly experience the impacts of energy decisions and require active engagement from decision-makers to ensure that the transition yields tangible benefits and aligns with their needs. Citizens’ choices are important for overall energy consumption and local energy projects and building new energy infrastructure can have positive and negative impacts on local communities. Thus, careful management and due diligence are essential to maintain their support.

Stakeholder interactions are instrumental in shaping the transition but can also lead to divergences that may take the form of countries not trusting each other to fulfil their obligations, communities losing faith in the reliability of decision-making processes and individuals struggling to understand and trust the information provided to them.<sup>39</sup> These divisions hinder collaboration and exacerbate challenges in achieving a just, equitable and inclusive energy transition (see Tables 2 and 3).<sup>40</sup>

Addressing these critical issues demands a fundamental reframing of the transition narrative to one that is tailored to resonate with the unique perspectives of each stakeholder group. Building trust requires proactive measures to bring stakeholders together around a common vision and shared objectives. This, in turn, requires strong collaboration, recognizing that no individual company, industry sector or stakeholder can effectively address this challenge in isolation, necessitating a whole-of-society approach to shape the specifics of this collective vision.<sup>41</sup>

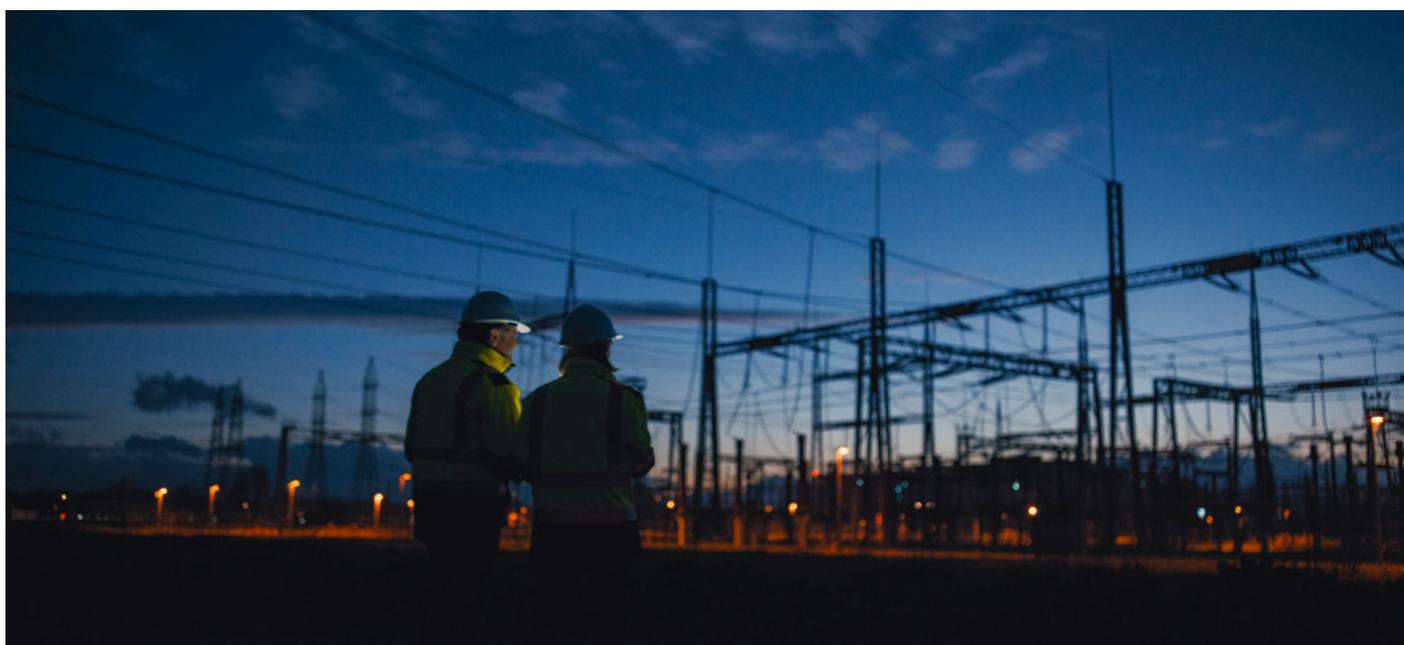


**TABLE 2 | Divergences within key stakeholder groups**

<p><b>Governments</b></p>	<ul style="list-style-type: none"> <li>– The Global North leads the net-zero narrative, with limited contributions from the Global South.</li> <li>– Advanced economies have concerns over the pace of transition in developing countries. Developing economies feel that advanced economies bear historical responsibility and propose unrealistic transition pathways.</li> <li>– The Global North has previously benefited from protectionism, while the Global South, which has been discouraged from implementing protectionist measures, now needs to implement industrial policies to stimulate socioeconomic development and reap the benefits from the energy transition.</li> <li>– Developing country governments face a triple challenge: pursuing low-emission development with rising energy demand and limited access to affordable capital.</li> <li>– Developing and developed economies face transition challenges, often due to competing political priorities like economic development and poverty alleviation.</li> </ul>
<p><b>Businesses</b></p>	<ul style="list-style-type: none"> <li>– Disparities in access to financial resources impact the pace and scale of transition efforts.</li> <li>– Sector-specific interests and concerns lead to the perception that the transition favours certain businesses over others.</li> <li>– Larger corporations have the resources to adapt to and invest in clean energy technologies and energy efficiency solutions and make them readily available.</li> <li>– Businesses within complex supply chains differ in their readiness and ambition for energy transition.</li> <li>– Some businesses prioritize profit or GHG emissions reduction over reducing inequities in the energy transition, leading to variations in their assessment and addressing of social and environmental impacts.</li> </ul>
<p><b>Communities and citizens</b></p>	<ul style="list-style-type: none"> <li>– Unequal distribution of benefits, disproportionate cost burdens and inequitable access to clean energy, impacting underserved communities.</li> <li>– Income disparities lead to different levels of resilience to and tolerance of energy price hikes.</li> <li>– Communities heavily reliant on fossil fuels or extractive industries may resist transition due to fear of job losses and economic decline.</li> <li>– Differential community involvement in decision-making and planning leads to varying levels of commitment to the transition.</li> <li>– Communities’ concerns regarding the environmental and social impacts of green projects can lead to “not in my backyard” (NIMBY) movements, creating divergences within the public.</li> </ul>

TABLE 3 | Divergences across key stakeholder groups

<p><b>Governments and businesses</b></p>	<ul style="list-style-type: none"> <li>– Certain government regulations may be viewed as burdensome or costly, particularly if businesses believe compliance hinders competitiveness.</li> <li>– Businesses may focus on investments that yield short-term returns, not aligning with a government’s long-term energy goals.</li> <li>– Governments may advocate for equitable distribution of resources in the energy transition, whereas businesses could prioritize resource allocation based on market dynamics.</li> <li>– Limited business engagement due to a lack of best practices and clear guidelines to achieve a just, equitable and inclusive transition, along with inconsistent corporate approaches for addressing the societal impacts of the transition.</li> </ul>
<p><b>Businesses and communities/ citizens</b></p>	<ul style="list-style-type: none"> <li>– Different priorities between communities and businesses: Communities, including citizens, focus on economic benefits, job creation, energy affordability and environmental concerns, while businesses may prioritize profitability, operational efficiency and regulatory compliance.</li> <li>– Financial constraints limit community and consumer investments in clean energy technologies and services compared to businesses.</li> <li>– Companies are often measured on GHG emissions over investments in solutions that address energy inequality. Moreover, many Environmental, Social, and Governance (ESG) measures primarily emphasize environmental factors, often neglecting equity in the energy transition.</li> <li>– Inconsistent engagement by businesses affects the acceptance of local energy infrastructure projects in communities.</li> <li>– Communities or citizens often lack trust in businesses to take action regarding the energy transition and may also have limited awareness of the benefits or necessity of transitioning to more sustainable energy systems.</li> </ul>
<p><b>Communities/ citizens and governments</b></p>	<ul style="list-style-type: none"> <li>– Governments may prioritize national energy policies and economic growth over local community needs and concerns.</li> <li>– Governments are reluctant to conduct consultations and consider policies that promote consumer engagement in the energy transition.</li> <li>– Governments set climate NDCs but lack similar targets for energy equity.</li> <li>– Limited or ineffective community engagement in decision-making processes leads to mistrust (e.g. around local energy infrastructure growth).</li> <li>– Resource allocation for energy transition initiatives (financial incentives or infrastructure development) may not match community needs and priorities, resulting in resistance or delays.</li> <li>– Unequal access to clean energy technologies, benefits and opportunities can exacerbate divergences as communities seek fairness and inclusivity.</li> <li>– Limited overlap between fossil fuel and clean energy jobs, in terms of geography and perceived job quality, risks alienating workers and undermining political support for the transition.</li> </ul>



## 3.2 Ten unresolved questions that need to be addressed

The symptoms of an unequal energy transition reveal underlying challenges and raise important questions. These non-technological determinants of the transition, with implications at the global,

national and local levels, demand attention and should inform decision-making by companies and governments, shaping the necessary adjustments and enhancements.

TABLE 4 **Critical questions for a just, equitable and inclusive energy transition**

● ○ ○ Global   ○ ● ○ National   ○ ○ ● Local

1	<b>Fair distribution and equal opportunity:</b> How can the opportunities and costs of the energy transition be fairly distributed between developed and developing countries, taking historical responsibilities and current economic capabilities into account?	● ● ○
2	<b>Equitable emissions reduction:</b> How can the burden of emissions reduction be distributed equitably among countries, companies, industries and individuals?	● ● ●
3	<b>Inclusive transition pathways:</b> How can current energy transition scenarios and pathways be adjusted to advance justice, equity and inclusivity, factoring in the priorities and needs of the Global South?	● ● ●
4	<b>Measuring progress and accountability:</b> What metrics and indicators are needed to measure progress and assess the impacts of a just, equitable and inclusive energy transition, and how can accountability mechanisms be established to determine stakeholder responsibilities?	● ● ●
5	<b>Universal affordable access:</b> How can affordable energy access for all be ensured while mitigating the impact of rising energy costs on financially disadvantaged individuals?	● ● ●
6	<b>Balancing local benefits and costs:</b> How can a balance be maintained between maximizing local benefits and minimizing local costs during the transition to ensure positive outcomes for communities and citizens?	● ● ●
7	<b>Collaboration versus competition:</b> How can competitive stakeholders collaborate on shared interests and public goods, such as promoting a just, equitable and inclusive energy transition?	● ● ○
8	<b>Job creation and accessibility:</b> How can job opportunities in new energy-related industries, resulting from the transition away from fossil fuels, be made visible and accessible to all?	● ● ●
9	<b>Enhanced transparency:</b> How can transparency be defined and improved within the energy system to facilitate more informed decision-making?	● ● ●
10	<b>Rebuilding trust:</b> How can trust be re-established between governments, businesses and individuals to ensure widespread support for the energy transition?	● ● ●

## BOX 2 | Better community engagement will help accelerate clean energy infrastructure deployment

Achieving a just, equitable and inclusive energy transition requires better community engagement. Such an approach should go beyond energy access, affordability and economic development outcomes to include local job creation and upskilling, engagement in the decision-making process and the equitable distribution of benefits and burdens.

Communities are increasingly impacted by the massive growth of infrastructure that is needed to meet net-zero goals, with clean power capacity alone expected to expand threefold by 2030 and ninefold by 2050. This deployment requires significantly large areas of land and water and will inevitably intersect with population centres and natural ecosystems, demanding an effort to be accepted and integrated into the social and cultural fabric. A growing awareness of the need for a just energy transition, broader access to information (and misinformation) and the amplification of voices through social media add to the challenge. If not managed, businesses risk losing their social acceptance to operate and eroding business

value – as already shown by increasing social opposition causing delays, suspensions or even cancellation of projects. When managed well, clean power infrastructure growth presents a considerable opportunity to create significant value for business as well as the wider system, including society, the economy and the environment.

In 2023, the World Economic Forum published the [Better Community Engagement for a Just Energy Transition: A C-Suite Guide](#) calling on industry to integrate a people-positive approach into clean power infrastructure deployment. This can be achieved by prioritizing community impact within the business strategy, as well as leveraging cross-sectoral collaboration to move towards a partnership approach with communities. The paper also calls on industry leaders to develop a framework for measuring social impact. Multiple stakeholders have tools to measure and benchmark carbon impact. Replicating something similar for social impact would be critical to accelerate progress by creating an objective basis for validating negative effects and value creation.



4

# Mobilizing for change

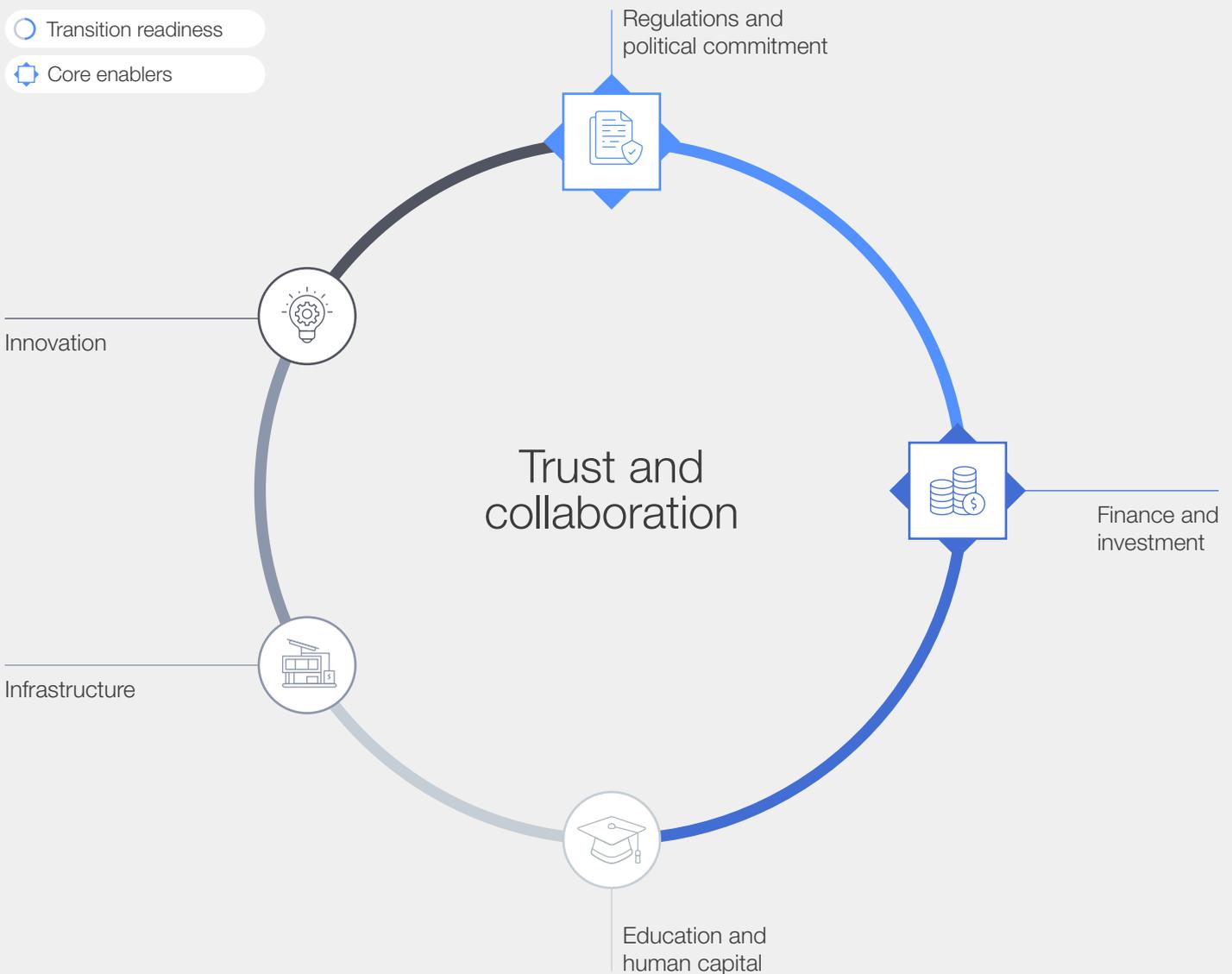
Concerted efforts are required to build trust and promote collaboration, advancing a just, equitable and inclusive energy transition.

A rapid and successful energy transition is essential to achieve global decarbonization and security objectives. However, without a firm commitment to justice, equity and inclusivity, there are risks of delays and insufficient progress. This transition depends on the creation of a robust enabling environment, including a strong regulatory framework and effective capital mobilization. This environment is crucial for countries seeking to attract investments in existing and nascent industries and technologies, particularly in clean energy, and necessitates the cultivation of a skilled

workforce, fostering innovation and investing in energy infrastructure, both physical and digital.<sup>42</sup>

As the energy system evolves, maintaining a balance among these enabling factors becomes important. Trust and collaboration play central roles in this interconnected environment. While trust is built through concrete demonstrated actions and is indispensable for overcoming the obstacles that hinder progress, collaboration is key to facilitating positive developments and ensuring a just, equitable and inclusive energy transition (see Figure 3).

FIGURE 3 Key enablers for the energy transition



“ Achieving the energy transition depends on people adopting a new approach to energy efficiency and technology use for net-zero or nature-positive outcomes.

Despite significant challenges, the solutions do not involve lowering ambitions or delaying action.<sup>43</sup> Instead, proactive measures are needed to bridge gaps, tackle uncertainties and build trust among the different stakeholders in the transition process. Below are some concrete actions that can be considered.

## 1. Regulation and political commitment

### a. Developing regulatory and fiscal measures and targeted interventions that address the needs of vulnerable stakeholders

To ensure a just, equitable and inclusive energy transition, governments and decision-makers must carefully manage fiscal measures, such as price regulation, energy tax reductions and fossil fuel subsidies, initially introduced to protect consumers and businesses from high energy prices during the energy crisis. Poorly handled subsidy reform can disproportionately affect vulnerable households, trigger social unrest and exacerbate inequality.<sup>44</sup> Therefore, these interventions necessitate careful design and targeting, recognizing that “political support for the transition can dissipate quickly if households or industries bear too much upfront cost without seeing tangible, near-term benefits”.<sup>45</sup> For developing countries still reliant on fossil fuel exports, the fiscal implications are significant, as these revenues often fund social programmes.

To navigate this complex landscape, governments may consider implementing social safety nets and compensatory measures such as cash transfers and temporary basic income initiatives, targeting poor households most impacted by energy-related costs. Understanding the socioeconomic conditions in affected communities is crucial, and effective public communication, transparency and stakeholder engagement are essential to secure confidence and build trust.<sup>46</sup> Additionally, international transfers can help close the funding gap in developing countries.

While fiscal measures are important, governments also need to incentivize the development of innovative solutions and new business models through structured regulatory approaches. This includes establishing clear regulations and procedures that not only facilitate systemic change but also incentivize the adoption of clean energy technologies. Additionally, when procuring renewable projects, non-price criteria must be considered to incentivize businesses to prioritize equitable and inclusive processes and outcomes. This involves not only establishing common indicators for accountability and progress tracking but also defining micro-level indicators that go beyond traditional metrics, encompassing factors like nature restoration, air quality improvements, local decarbonization, jobs and social value creation.

### b. Implementing measures that empower individuals to make informed choices about their energy consumption

To empower individuals to make informed decisions, actively participate in and collaborate for a meaningful energy transition and alleviate their burdens, governments must provide them with the necessary choices, tools, infrastructure and enabling environment. Energy efficiency improvements can cut costs and enhance energy security and sustainability. While technology increasingly empowers citizens to manage their energy use, transparency, accountability and access to timely information, economic incentives and well-crafted policies remain key drivers for building trust and enabling informed decision-making.

Achieving the energy transition depends on people adopting a new approach to energy efficiency and technology use for net-zero or nature-positive outcomes. It requires joint efforts from both the energy demand and production sides. To drive policy change and engage individuals and consumers effectively, it is crucial to demonstrate the benefits. For example, market models should protect consumers from price volatility and ensure fairness in the energy transition.

Empowering citizens to make cost-effective, eco-friendly choices hinges on providing them with real-time information about their energy consumption, helping them understand the options available to them, and offering actionable steps and support to reduce emissions and adopt energy-saving practices. For example, policy frameworks and measures like “tax breaks, subsidies and rewards for adopting renewable technologies, electrification and energy storage, combined with innovative business models to give people greater access to clean energy”<sup>47</sup> are essential to enable participation.

## 2. Finance and investment

### a. Directing investment towards countries, regions and communities where it can have maximum positive impact

Advancing a people-centred energy transition requires a rethinking of established financing and investment approaches to bridge the gap between available capital and the needs of emerging and developing economies, as well as addressing energy poverty in advanced economies. Significant investment across the energy system, with a focus on underserved regions, local communities and individuals, is needed.

At the country and regional levels, there is a need to direct financing beyond clean power generation to include grid expansion and modernization. While these investments may yield lower financial returns, they provide reliable electricity access to communities and businesses,<sup>48</sup> ultimately helping raise their incomes.

Despite the tendency to prioritize development finance for large projects in countries with well-established renewable energy sectors, smaller-scale projects in regions with limited technical capacity can have a more significant impact proportionally. For instance, the return on carbon abatement per dollar invested in an emerging country like Indonesia is significantly higher than in developed countries. A substantial gap remains to be filled with regard to achieving Sustainable Development Goal 7, which aims to ensure access to clean and affordable energy for all by 2030. Beyond a reliance on market dynamics, there is an opportunity to leverage philanthropies, development finance institutions and private capital to catalyse these partnerships and ensure that financing is directed to where it can have maximum positive impact.

At the community level, the right upfront financing needs to be broken down into small ticket sizes and innovative payment structures that incentivize private sector involvement through SMEs are needed to make products accessible to peripheral or vulnerable segments of society, including those in advanced economies who struggle with energy poverty. Additionally, the digitalization of financial services can improve access to finance for local communities and individuals, fostering trust and inclusivity in the energy transition.

### 3. Education and human capital

#### a. Job creation, and reskilling and upskilling incumbent workers affected by the energy transition

As the global energy transition gains momentum, it is also expected to bring significant changes to the job landscape. The International Energy Agency's 2022 report *World Energy Employment* estimates

that “the energy transition will create 14 million jobs related to clean energy technologies by 2030” and another 16 million in areas such as retrofitting and constructing energy-efficient buildings and manufacturing new electric vehicles. On the other hand, about five million people currently employed in fossil fuel industries may face job losses due to the transition,<sup>49</sup> and unfortunately, many of them may not be well-equipped to transition to these new sectors. Understanding the specific characteristics and skill requirements of low-carbon jobs and bridging the gaps – spatial, temporal and educational – between lost and new jobs remains a challenge. Evidence suggests that low-carbon jobs typically demand a high level of skills, especially in technical roles, which acts as a barrier to entry for these positions.<sup>50</sup> To bridge this gap and ensure community involvement and readiness for the job opportunities stemming from the energy transition, it is key to align local education with these prospects. This challenge underscores the need for immediate action and calls for unprecedented collaboration among communities, policy-makers and businesses.

It requires a focus on reskilling individuals who will lose their jobs due to the transition, providing new skills and training for those who will benefit from newly created jobs, and mandating the sourcing of goods and equipment from domestic supply chains to promote job creation and sustain employment.<sup>51</sup> Investments in retraining and the transferability of skills from the fossil fuel sector to the clean energy sector are vital. Skills from the oil and gas industry, for example, can be transferred to areas like offshore wind, carbon capture utilization and storage, and low-carbon gas production and transport. Similarly, the expertise of coal miners can be applied to the growing critical minerals industry. Remediating fossil fuel sites also requires many of the same skills prevalent among workers in these industries.<sup>52</sup>



“ Distributed renewable energy options, such as small-scale solar systems and mini-grids, could be the most cost-effective ways to provide power to more than 60% of Africa’s off-grid population.

## 4. Infrastructure

### a. Long-duration planning and forward-looking strategies that expand electricity access to underserved regions

Failure to prioritize long-term infrastructure planning and social equity considerations can hinder the pace of the transition. There is a growing realization that grid infrastructure is becoming a bottleneck. While the emphasis on adding more renewables is valid, there is also a need to ensure that grids can efficiently evacuate this energy to where it is needed. In regions like Sub-Saharan Africa, which is massively underserved and where grid development may take decades, it is essential to provide practical and sustainable solutions to improve energy access. Distributed renewable energy options, such as small-scale solar systems and mini-grids, could be the most cost-effective ways to provide power

to more than 60% of Africa’s off-grid population.<sup>53</sup> Beyond providing direct benefits to local communities in terms of energy access, these off-grid alternatives contribute to improved livelihoods, create opportunities for entrepreneurship and support income generation.

The pace and scale of the energy transition necessitate a multifaceted approach that encompasses long-term planning, formulation of comprehensive, forward-looking strategies that provide industry with the necessary visibility to execute the transition effectively and an unparalleled level of collaboration not just across sectors but also stakeholders and geographies. This collaborative effort is not limited to infrastructure; it extends to supply chains as well. A fragmented approach to supply chains, with countries pursuing isolated strategies, can be counterproductive and significantly slow down the transition.



## 5. Innovation

### a. Rapid deployment of existing clean energy technologies and accelerating the development and diffusion of new technologies to meet the needs of developing countries

Achieving the goal of net-zero emissions by 2050 hinges on two critical components: rapid deployment of existing clean energy technologies, either independently or by leveraging existing infrastructure, and the accelerated development of new technologies. Accelerating the deployment of clean energy technologies at scale, particularly in emerging and developing economies where they are needed the most, requires a significant reduction in cost, formulation of new business models, supportive government policies and open markets that allow for technology transfer. Simultaneously, nascent technologies like green hydrogen and bio-based products require further development and strategies to ensure their accessibility, affordability and adoption in developing countries.<sup>54</sup>

The current pace of low-carbon innovation falls short of the urgency required for the transition, with a slowdown in climate-related frontier innovation observed in most major innovating countries over the past decade, except for Denmark.<sup>55</sup> This slowdown directly affects developing countries where these technologies are not made readily available due to underdeveloped ecosystems or trade barriers. Addressing these challenges necessitates the immediate development of robust policies and institutions that support innovation and technology transfer.

In recent years, emerging economies like China and India have demonstrated their ability to rapidly adopt and even lead in new energy technologies and value chains. China has seen significant growth in areas like batteries, electromobility and high-voltage transmission, while India has substantially expanded its renewable energy capacity and made advancements in clean hydrogen. To reduce uncertainties associated with these technologies, facilitate their widespread adoption and foster further innovation, it is imperative to strengthen international cooperation, promote knowledge sharing among stakeholders and adapt solutions to local contexts and priorities.

# Conclusion

The pace and scale of the global energy transition pose unprecedented challenges and extraordinary opportunities. As the world grapples with the urgent need to decarbonize, it has become increasingly clear that this transformation must be carried out in a just, equitable and inclusive manner. An energy transition rooted in these principles is not merely a moral imperative but a strategic necessity. Failing to adopt a people-centred approach and address the socioeconomic implications of this transition not only risks the entire energy transition but also threatens to erode the trust required for collective progress towards climate and energy transition goals.

The energy transition is inherently complex, with far-reaching implications for society, the economy and the environment. An unjust, inequitable and non-inclusive transition manifests in various ways, including disparities in energy access, price volatility, affordability constraints, unequal job impacts and finance allocations. Addressing these challenges and fostering the necessary trust requires a multifaceted approach grounded in specific measures, concerted efforts and partnership structures where roles are clearly defined.

This entails the development of regulatory and fiscal policies, and targeted interventions that address the needs of vulnerable stakeholders. It also involves directing investments towards regions, countries and communities where they can have the most significant impact. Forward-looking strategies are essential to ensure clean and reliable energy for all, alongside commitments to job creation and the reskilling and upskilling of workers affected by the transition. Empowering individuals to make informed choices about their energy consumption is crucial, as is the rapid deployment of existing clean energy technologies while accelerating the innovation and development of new technologies that meet the needs of developing countries.

Above all, it requires a fair distribution and accessibility of both the benefits and opportunities, active involvement of diverse stakeholders in decision-making processes and space for the inclusive development of all, the acknowledgement and rectification of past injustices and ensuring no one is left behind. These principles form the foundation of a just, equitable and inclusive energy transition that prioritizes the well-being of individuals and the planet.

Addressing the challenges and divergences created by an unequal transition, alongside critical questions, can inform future decision-making, shaping the necessary adjustments and enhancements while fostering collaboration and innovation among key stakeholders. Enhancing collaboration is key, as these challenges cannot be addressed in isolation. They are a shared responsibility that transcends geographical and sectoral boundaries.

As the world stands at a crossroads, stakeholders must decide whether to harness the potential for a more equitable, sustainable and prosperous future, thus allowing for a smooth energy transition, or risk exacerbating divisions and inequalities that could undermine trust and slow progress.

In navigating these uncharted territories, it is important to recognize that the choices made today will shape the future of the energy system. The path to a just, equitable and inclusive energy transition may be complex, but it is worth taking, as it promises a more sustainable, resilient and harmonious world. It is the collective responsibility of every individual to ensure that no one is excluded in this journey.

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