



The Bac Lieu wind farm in southern Vietnam. Many Asia-Pacific economies are targeting substantial increases in clean electricity generation by 2035. PHOTO: BT FILE

Asia-Pacific's energy transition demands a labour market transformation

With a skilled and supported workforce, the region's clean power future will leave no one behind. **BY LIN YANG, SU BIN AND DA ZHANG**

THE Asia-Pacific region stands at the centre of the global energy transition. It accounts for roughly half of global greenhouse gas emissions and will drive the majority of future energy demand growth.

Its transition is therefore decisive for global climate outcomes.

Governments across the region have responded with ambitious renewable energy targets, expanding policy frameworks and rapidly increasing investment in clean energy.

Many economies are targeting substantial increases in clean electricity generation by 2035, aligned with regional commitments to reduce energy intensity and accelerate decarbonisation.

Yet, despite this momentum, the pace and inclusiveness of progress remain uneven. One critical barrier is often overlooked: Success depends not only on technology, infrastructure and finance, but also fundamentally on people.

Beyond megawatts

Ambition alone does not guarantee implementation.

Grid congestion, delayed project delivery and underutilised renewable capacity increasingly reflect shortages of skilled engineers, technicians, planners and regulators, alongside financial or technological constraints.

Skills shortages in renewable energy deployment, grid modernisation, electric vehicle ecosystems and energy efficiency services risk slowing implementation.

This constraint also increases the reliance on imported expertise while reducing local employment and small and medium-sized enterprise spillovers.

For the power sector, comparative ex-

perience shows that regions with stronger institutional capacity and workforce readiness are better able to integrate variable renewables and operate complex, interconnected power systems without undermining local job opportunities.

Hence, the energy transition is, at its core, a labour market transformation.

The International Renewable Energy Agency (Irena) and International Labour Organization (ILO) estimate that the global renewable energy workforce will expand from today's 16.6 million to 30 million jobs by 2030, and to nearly 40 million by 2050 if appropriate policies are put in place.

Asia dominates this landscape: China alone accounts for about 7.4 million renewable energy jobs and India employs more than a million workers in the sector, Irena reported.

At the same time, the transition will reshape – and could disrupt – existing employment structures, potentially requiring up to 16 million workers to shift to new roles, the International Energy Agency said. Substantial labour reallocation pressures would arise, along with the need for skills development.

Evidence from large-scale labour market data shows that these transitions are often slow and geographically mismatched, disproportionately affecting lower-skilled and older workers.

The challenge facing Asia-Pacific countries is how to ensure their labour markets are prepared to meet the scale and scope of skills required for the energy transition.

Managing this process successfully will not only accelerate the energy transition, but also ensure that the full socio-economic benefits of clean energy are captured.

Despite the Asia-Pacific being a major hub for clean energy investment, people-centred transition policies account for less than 1 per cent of global public spending, said Boston Consulting Group and AVPN. Many developing economies lack robust reskilling systems.

This gap risks becoming a binding constraint: Firms report growing difficulty in sourcing qualified personnel for renewable energy operation, maintenance and system integration, even as demand for clean power accelerates.

A third of workers in the region have education levels below those required for their occupation, ILO noted.

About 15 per cent of firms reported that an inadequately educated workforce is a major or severe constraint. In six of 35 countries with available data, more than 20 per cent of firms reported this issue, calculations by the United Nations Economic and Social Commission for Asia and the Pacific showed.

Addressing these pressures will require closer alignment between energy planning and workforce and education systems. Skills development must keep pace with evolving energy infrastructure.

Early and scalable investment in reskilling and certification can reduce adjustment costs and expand participation in emerging clean energy jobs.

Stronger labour market institutions and social protection to support worker mobility can prevent transition pressures from falling disproportionately on vulnerable groups and risk social cohesion.

On the other hand, poorly managed transitions could deepen vulnerabilities, particularly for informal workers, women, older workers and rural communities.

Today, women remain under-represented in green jobs due to social norms, unpaid care responsibilities and limited access to science, technology, engineering and mathematics education and skills.

Youth inclusion is equally critical. In many Asia-Pacific economies, where young people still account for a large share of the population, education and training systems must prepare them for emerging low-carbon industries to drive the region's transition over the long term.

Ultimately, the success of the region's energy transition will be determined by how well countries balance three interdependent goals: economic growth, decarbonisation and social equity.

The Asia-Pacific's clean energy future will not be measured solely by megawatts installed or policies enacted. It will also depend on whether workforces are prepared, institutions are capable, and transition benefits are broadly shared to strengthen stability and resilience.

Shifting from infrastructure-led approaches to genuinely people-centred strategies that integrate education, reskilling, social protection and inclusive workforce participation is not optional, but essential.

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