

A photograph of two workers in safety gear (hard hats and high-visibility vests) standing in a field of wind turbines at sunset. The worker on the right is holding a laptop and pointing towards the turbines. The worker on the left is also pointing. The background is a warm, golden sunset with several wind turbines silhouetted against the sky.

Enabling net zero through a green workforce in Africa

Green skills – a critical factor in realising the success
and speed of the just transition.

According to the WEF Future of Jobs 2023 report¹, employers estimate that 44% of workers' skills will be disrupted in the next five years with those who do not upskill themselves at the forefront of this disruption. Sustainability Specialists and Environmental Protection Professionals are expected to grow by 33% and 34% respectively, translating to growth of approximately 1 million jobs globally. This is in line with business leaders' expectations for the green transition and climate-mitigation investments to drive job growth. This leads us to the question:

How can our economies grow more thoughtfully through focusing on sustainability, and addressing climate change while also providing new opportunities for the global workforce?

Sustainability response has become a global imperative that needs to be understood on a worldwide scale. Sustainability initiatives have wide-scale reach and identifying new trends and innovations requires broad awareness. These initiatives need to complement each other. However there is no 'one-solution' in embedding an appropriate response to addressing material sustainability matters. When focusing on energy as part of our system/operating context, we need to cater for the fact that drivers and trends are constantly evolving and a collaborative effort is needed in order to enable the just energy transition.

As the world transitions to net zero and the traditional job roles change, as jobs disappear, new jobs aligned with or supportive of country-specific net-zero objectives, which we refer to as 'green' are created. There is no standard definition of a 'green job'. A useful definition from the International Labour Organization is "decent jobs that contribute to preserve or restore the environment, be they in traditional sectors, such as manufacturing and construction, or in new, emerging green sectors, such as renewable energy and energy efficiency"².

Green skills, which form the basis of a green workforce, typically fall into three main categories³:

1. **Green new and emerging:** The transition to a sustainable economy leads to the creation of new occupations with unique tasks and worker requirements.
2. **Green enhanced skills:** The transition to a sustainable economy significantly alters tasks, skills and knowledge requirements for these occupations.
3. **Green increased demand:** The transition to a sustainable economy creates higher demand for these occupations, but there are no significant changes in tasks or worker requirements due to greening. Such jobs are considered indirectly green because they support green economic activity but do not involve any green tasks.



¹ WEF, Future of Jobs report 2023 <https://www.weforum.org/reports/the-future-of-jobs-report-2023>

² International Labour Organization, 2016. What is a green job ? https://www.ilo.org/global/topics/green-jobs/news/WCMS_220248/lang--en/index.htm

³ Alex Bowen, Karlygash Kuralbayeva, Eileen L. Tjoe, 2018. Characterising green employment: The impacts of 'greening' on workforce composition. *Energy Economics*, Volume 72, Pages 263-275. <https://www.sciencedirect.com/science/article/pii/S0140988318300963>

Although sustainability initiatives can be driven from a reporting, data and metrics perspective, the workforce is a key and pivotal enabler to bringing any sustainability strategy to life. In South Africa 70% of companies believe the broader application of environmental, social and governance (ESG) standards will drive job growth, followed by investments in green transition (41%)⁴. A green workforce is needed to meet governments' commitments to accelerate the energy sector's decarbonization. However, with the creation of greener job opportunities, the upskilling and training of personnel and graduates along the sector's value chain needs to be accelerated to keep up with the demand for green jobs.



As part of ensuring a just transition, we will need to put measures in place that plan for workforce reskilling and job absorption, social protection and livelihood creation, incentivising new green sectors, diversifying coal dependent regional economies, and developing labour and social plans as and when ageing coal-fired power plants are decommissioned”

– President Cyril Ramaphosa⁵

Upskilling the workforce

Amid a historic reimagining of the future of work, we're faced with an urgent need to transition our society to a green economy to address the threat of climate change. We need to zoom in on the skills that power these jobs — green skills — and form an action plan.

Developing workforce expertise and changing behaviour needs three things:

1. The knowledge and skills to understand sustainability risks and act on them in their roles.
2. The support to put knowledge and skills into practice in their roles.
3. The mindset to collaborate with others when pursuing climate opportunities.

It is important to upskill the workforce on creating an awareness of sustainability's importance globally, for the organisations they work for and for them. This builds alignment between leadership ambitions as well as management expectations. In enabling the just transition, it requires all employees to become change agents in their own right through understanding the opportunities and risks sustainability offers. Engaging in upskilling programmes will allow the workforce to apply 'sustainability knowledge' to their everyday lives.

This requires upskilling programmes that:

1. **Engages:** Inspires and informs the workforce of how sustainability is relevant to them.
2. **Equips:** Shares the knowledge and tools needed to deliver sustainability transformations
3. **Empowers:** Embed understanding of what needs to be done to capture sustainability value

⁴ WEF, Future of Jobs report 2023 <https://www.weforum.org/reports/the-future-of-jobs-report-2023>

⁵ "Statement by H.E. President Cyril Ramaphosa of South Africa to the United Nations Secretary-General at Climate Summit, 23 September 2019," Department of International Relations and Cooperation - South Africa, last modified 25 September 2019, <https://www.dirco.gov.za/docs/speeches/2019/cram0923.htm>.



Learning and development programmes must create a balance between general and specific skills, building worker resilience and flexibility to change.

1. **On-the-job training** will be an important route for reskilling or upskilling existing workers that need to transition into greener skilled jobs.
2. **Targeted transition policies and programmes** are required together with improved clarity on **career paths** at different stages of the just transition. This needs to be aligned with the company's strategy to ensure that new opportunities are available to underrepresented groups and transitions are managed effectively.

Upskilling is about more than just providing access to training. It's about identifying the knowledge, skills and experience that will be most valuable in the future for new and transformed roles. It's about developing an effective way to support and inspire people to take action today and continue to adapt in the future.

This means understanding evolving skills gaps and mismatches, creating the right employee experience and buy-in to unleash energy for change, developing engaging skills-development programmes, and driving return on investment with an appropriate learning organisation and technology.

Upskilling will require cost and investment; however, upskilling brings economic benefits to people and communities, as well. It allows people to move to new jobs that are better and more future-proof, and helps preserve a nation's taxation revenues and reduce social safety net expenses.

Spotlight: Shifting the skills landscape in the automotive industry across Africa

There are tremendous changes happening within the automotive industry in Africa, which will give rise to a whole host of new workforce skills and development opportunities. One such movement is the support of the transition from current vehicles into the adoption of New Electric Vehicles (NEVs).

However, it is important for this sector to prepare for not only the adoption of NEVs but also the just energy transition, by developing specialised skills needed for building and maintaining the necessary infrastructure.

Some of the emerging green skills in the automotive sector are:

- Prototyping of hardware design, software development, EMC compliance, and functional testing
- Embedded product development: in-vehicle and outside-vehicle deployment of various data networking protocols
- Multidisciplinary technology design
- Communication skills
- Problem-solving skills
- Analytical skills and creative skills
- Electrical power line installation and maintenance
- Equipment testing
- Technicians (switches, transmitters, and light fixtures)
- General maintenance

As Electric Vehicles become more popular as people find the need to reduce their personal and organisations' environmental footprint, this gives rise to new skills, structured into new roles that will reshape the sector.

Embedding sustainability skills throughout the workforce through trust-based leadership

Trusted leadership is needed now more than ever to enable the just energy transition. To rise to the challenge of upskilling the workforce to enable the just transition will take both a personal commitment and organisational action at scale. It will take collaboration and debate. It will take fresh insights and ambitious thinking. Business leaders need to drive the tone from the top by:

1. Supporting green upskilling and reskilling efforts through **targeted investment into workforce training**, as well as through learning courses and local programmes.
2. Recognise the **importance of green hiring and upskilling**
3. Ensure **new policies create opportunities for the equal development** of green skills across all groups, supported by significant investment to ensure green skilling opportunities are accessible to diverse groups
4. **Reimagine some open and future roles** – the vast majority of green skills are being used in jobs that aren't traditionally thought of as green.

Bringing people along on the journey

Sustainability upskilling initiatives can be complex, disruptive, and disappointing when they fail to achieve lasting results. Bringing a change lens throughout the process adds the clarity, alignment, and energy needed for sustainable impact. Milestones of embedding sustainability initiatives are:

1. Aligning on an sustainability vision in embedding upskilling initiatives throughout the organisation
2. Defining an actionable upskilling strategy to roll out upskilling initiatives
3. Building out enabling partnerships to bring the strategy to life
4. Carrying the organisation through the change

Sustainability upskilling initiatives supported by change management are more likely to stay on budget, on schedule, and achieve lasting results.



Spotlight: Transitioning the coal mining workforce

Investment in renewable energy sits at the heart of measures Africa should take to ensure a just energy transition. The economy is dependent on coal-fired power and is about three-times more carbon intensive than the global average.

Coal is the largest component of mining by sales value and is a critically important source of primary energy (electricity and liquid fuels) that drives the South African economy.⁶ The long-term transition away from coal can positively contribute to economic growth, restore the environment, and possibly create different jobs for the coal mining workforce. But, what does this mean for the current coal mining workforce?

To respond to these challenges, businesses and governments must bridge the gap between the capabilities of current employees and the skills that will be needed to drive future growth. Upskilling and reskilling will be key to enable coal miners to participate, and thrive, in the NetZero economy. Possible new jobs across the value chain will include:

- Specialists in the re-mining of waste dumps
- Data analysts
- Workplace & worker experience reformers
- Re-designers of underground operations
- Underground drone operator
- Application developer
- Autonomous truck and loader supervisor

Mining companies also need to think about de-risking critical supply chains and investing more in local communities. A shift towards localisation in supply chains and for smaller deals in local markets, as well as different forms of community engagement, is an imperative for change and key to enabling the NetZero workforce.

There is not enough focus on adult basic education and the proper upskilling of mineworkers. Training programmes can be provided through incubator projects, entrepreneurship programmes which can lead to supplier development programmes, learnerships, internships and bursaries to mines, EDS partners with companies and various government departments.

Upskilling mining communities with entrepreneurial/digital skills to build a sustainable community is key. Educating mining communities is imperative because it can help break the cycle of poverty by bringing in more skills to the community and uplift its members. Investing in upskilling can benefit individuals, the economy, and the overall socioeconomic status of a community. By demonstrating that people's lives can improve and offering a new way of life, it can lead to a community-wide strategy for upskilling.

⁶ Minerals Council South Africa, 2021. *Integrated Annual Review 2021*. <https://www.mineralscouncil.org.za/industry-news/publications/annual-report>





Why does sustainability upskilling matter to employees?

The workforce is changing. One of the most important ways that sustainability is impacting the workforce is in the hiring and retention of skills within an organisation. The workforce will primarily be made up of Millennials and Gen Zs by 2029⁷. An increasing number of workers are entering the workforce and looking for companies that share their values. These generations are more environmentally and socially conscious and more likely to consider a company's sustainability policies when making job decisions. The workforce is no longer just interested in earning a paycheck – they want to know that their work is making a difference. To get ahead of the shift, employers must begin adjusting their practices to fit these changing expectations.

⁷ Global Payments, 2022. How Millennials and Gen Z are shaping the future of payments. <https://www.globalpayments.com/en-gb/insights/2022/01/31/millennials-and-gen-z-shaping-the-future-of-payments>

Spotlight: Embracing a Green Hydrogen Workforce in South Africa

Global momentum is growing across the hydrogen industry, with few sectors likely to remain untouched by this upcoming energy revolution. Given that this is only one of the numerous green hydrogen initiatives underway in the nation, it is clear that careful planning is necessary to prevent having to ask for assistance from abroad when hiring people when the green hydrogen economy finally arrives at our doorstep. Various initiatives across the nation demonstrate that this shift to a greener energy industry is taking place.

If South Africa can leverage the vast abundance of wind and solar natural resources and combine them with a fertile investor and regulatory environment, it could transition to an exporter of green energy to the world alongside decarbonising large sectors of its own economy⁸.

Investing in green hydrogen can create more jobs in renewable energy and hydrogen than the jobs lost in traditional energy methods, resulting in a positive net effect on employment. However, this will require extensive upskilling and retraining for the new world in terms of hydrogen fuel. Across the value chain, South Africa is going to need scientists, researchers, and highly-specialised individuals who can produce green hydrogen by electrolysing water. We need to start with training and upskilling people within the country, particularly young, unemployed people, through health and safety courses to enforce the Occupational Health and Safety Act. This will become increasingly important as the hydrogen industry is regarded as high risk due to the nature of fuel and gas.

Building the hydrogen economy is going to require cooperation and coordination between many stakeholders, particularly in education, training and learnership opportunities. Government entities, educational institutions and the private sector are going to have to come together to handle the increased demand for skills and qualifications in this industry.

⁸ PwC, 2023. Unlocking South Africa's Hydrogen Potential. <https://www.pwc.co.za/en/press-room/unlocking-south-africas-hydrogen-potential.html>

The future is here...

The transition to the green economy requires organisations to take a proactive and intentional approach towards developing a green workforce. A holistic data-driven approach is required to sustainably manage workforce risk, embrace diversity and inclusion and develop the green skills that will be needed to prepare for the future, today.

PwC utilises a customised skills assessment that provides a dashboard view to provide key short, medium and long term recommendations of individual and department-wide skills in relation to an organisation's desired sustainability competencies – following a strategy-led, data-driven, capability orientated approach. We know the interplay between local and global trends with regards to the just transition leads to greater uncertainty. Having the analysis and insight needed to make the right decisions for your people and organisation is more important than ever as businesses prepare and navigate the transition towards NetZero. We have a dedicated team with skills transitioning expertise to assess and recommend workforce transitioning best practice, career path mapping as well as upskilling opportunities in line with a company's sustainability strategic intent. To ensure that we begin from a solid base, we always start with understanding your strategy and its implication on your skills clusters.

A key part of ensuring sustainability is seeing and planning ahead. Organisations need to proactively ensure they will have the right skills at the right time. PwC uses Strategic Workforce Planning (SWP) to empower organisations to ensure sustainable management of the green workforce by having the analysis and insights needed to make the right strategic choices for the workforce. This enables organisations to realise their dream workforce through a data-driven approach that centres around the long term business strategy.



Is your workforce ready and able to help implement your company's sustainability strategy? For more information on what tools to embrace, how to upskill your workforce, empower it through greener ways of working and ultimately transform the culture of your organisation, please contact:



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