KPMG

A New Dawn for Human Capital

How Energy and Natural Resources leaders can manage their workforce as a strategic asset

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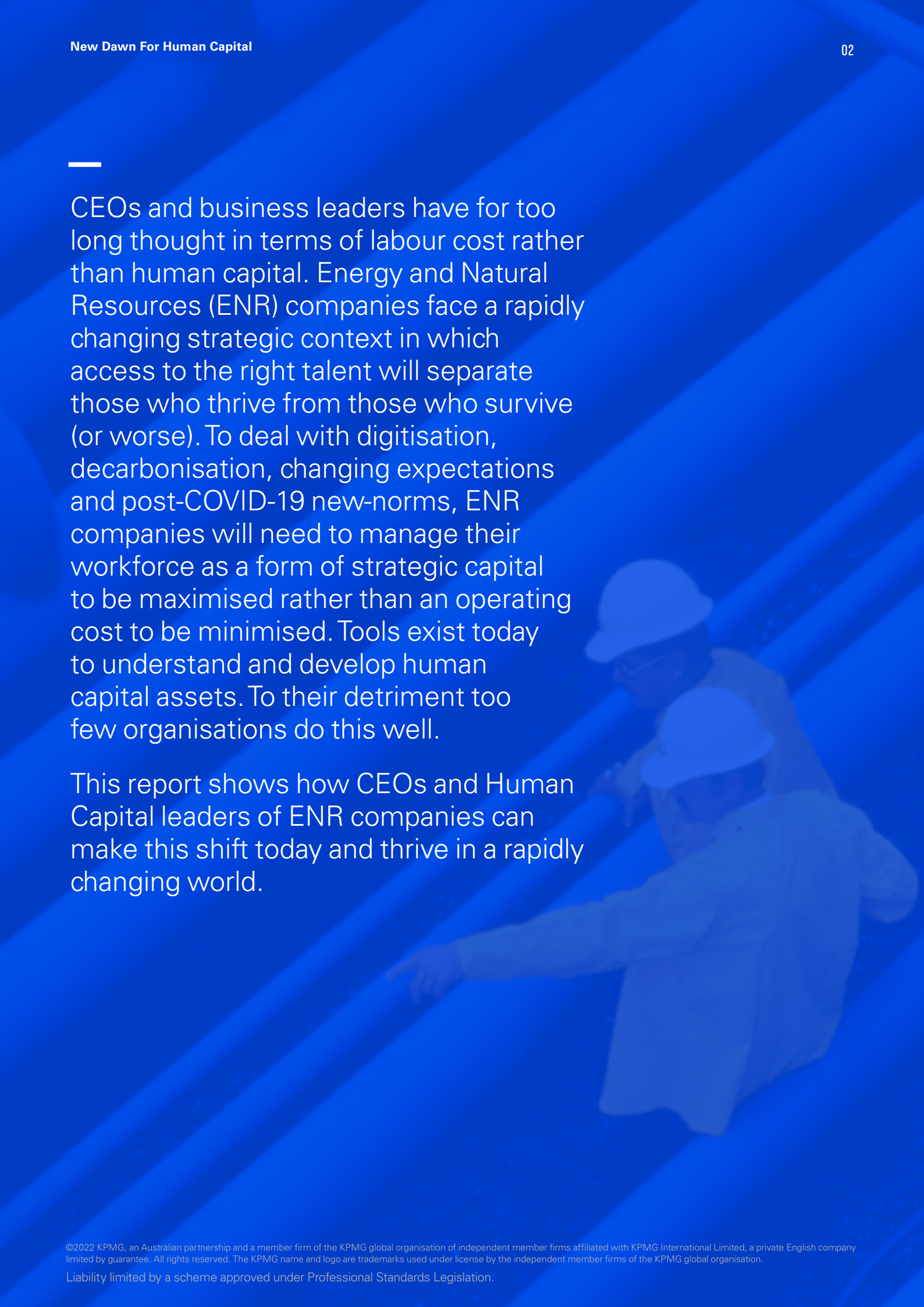
CEOs and business leaders have for too long thought in terms of labour cost rather than human capital. Energy and Natural Resources (ENR) companies face a rapidly changing strategic context in which access to the right talent will separate those who thrive from those who survive (or worse). To deal with digitisation, decarbonisation, changing expectations and post-COVID-19 new-norms, ENR companies will need to manage their workforce as a form of strategic capital to be maximised rather than an operating cost to be minimised. Tools exist today to understand and develop human capital assets. To their detriment too few organisations do this well.

This report shows how CEOs and Human Capital leaders of ENR companies can make this shift today and thrive in a rapidly changing world.



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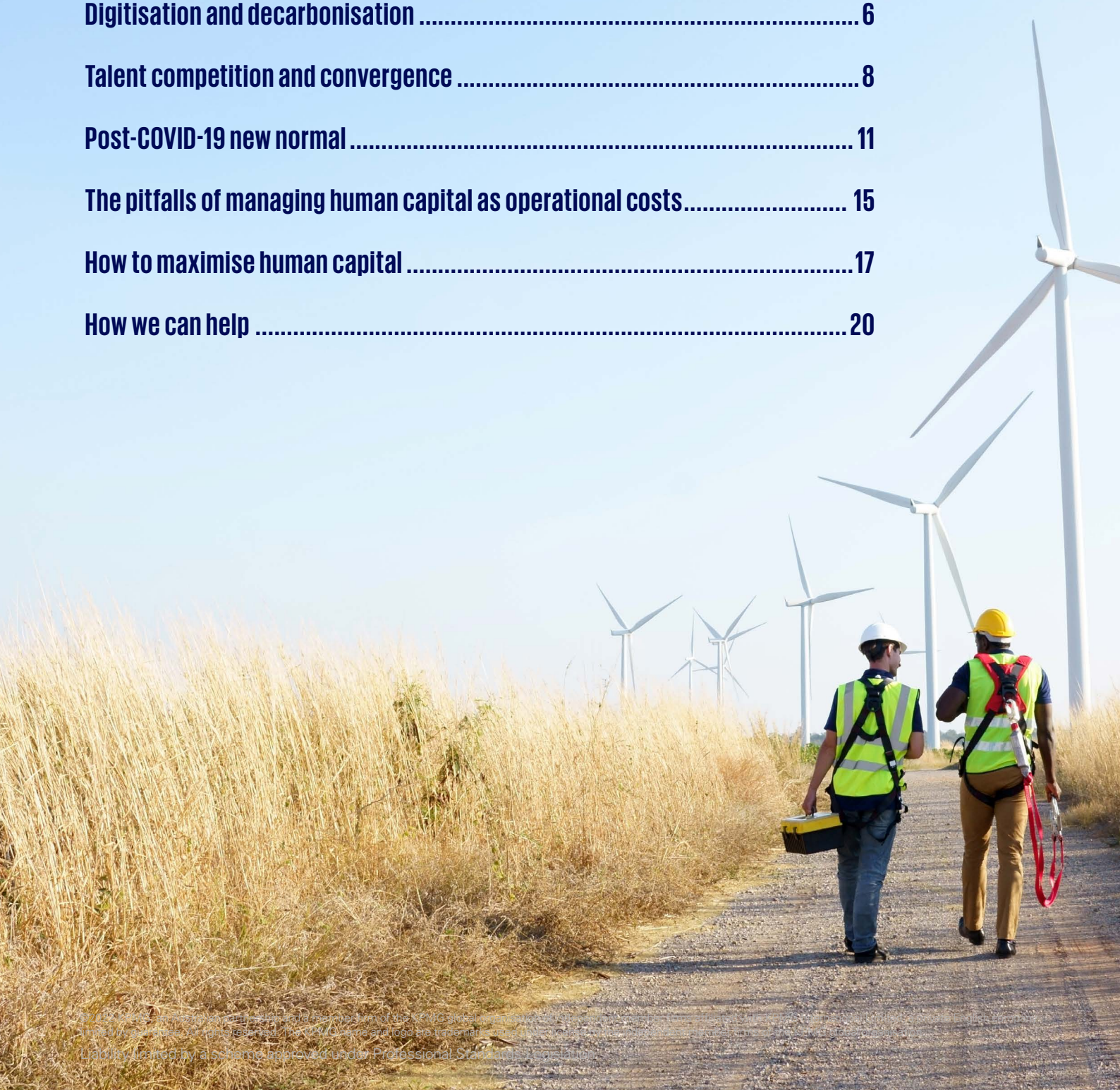
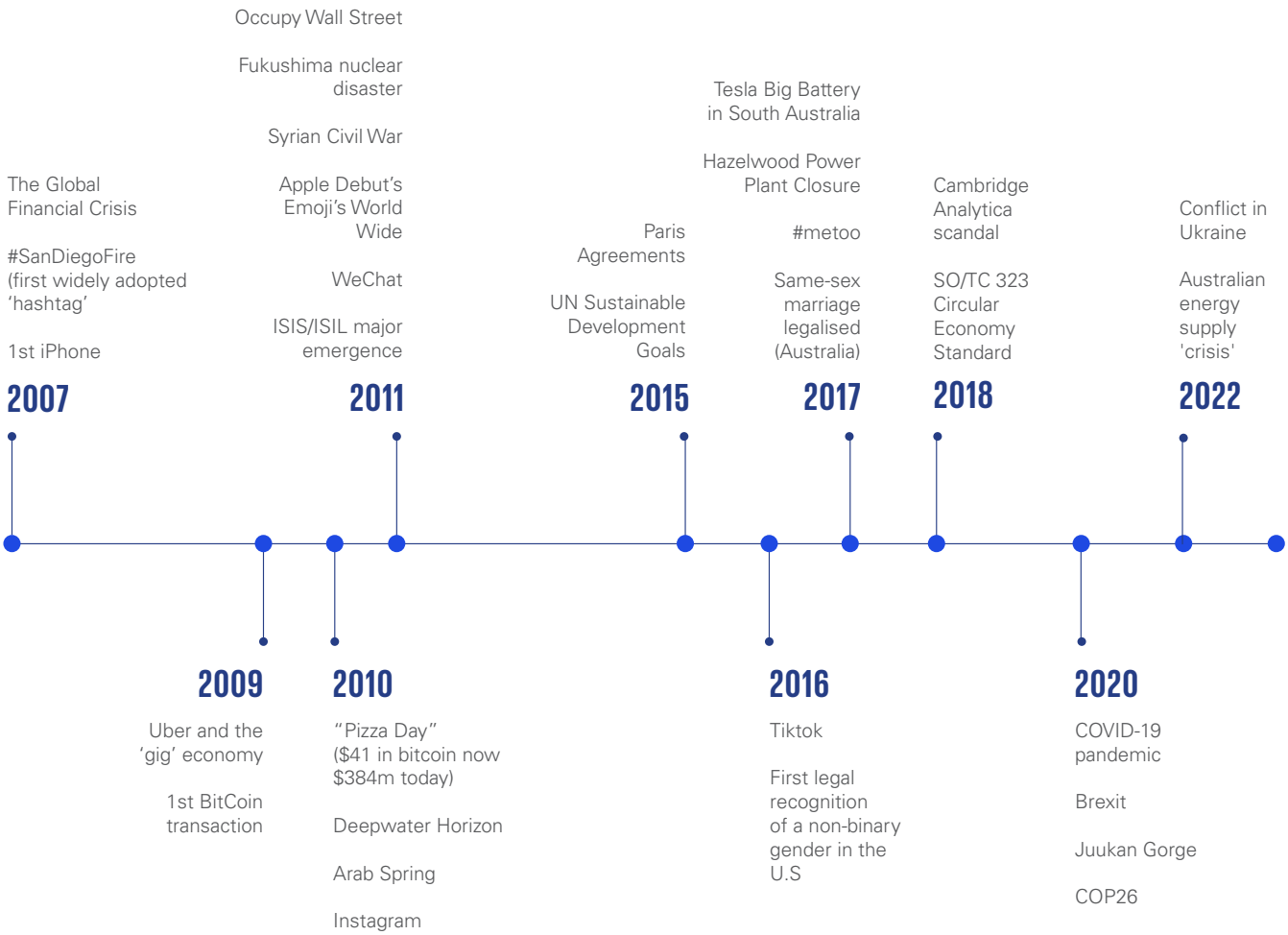


Rapidly changing context

The last 15 years have seen established norms swept away and new dynamics emerge. Financial crises, military conflicts, transformative social changes, new technologies, environmental disasters, and new economic models have fundamentally altered the strategic context in which ENR companies operate.

FIGURE 1. MACRO EVENTS THAT HAVE RAPIDLY CHANGED THE STRATEGIC CONTEXT



In our analysis three persistent themes continue to shape the talent landscape:

1 **Digitisation and Decarbonisation** will continue to drive new roles and the need for new skills.

2 **Competition for talent** amongst industries will converge on key STEM, green and soft skills.

3 **Employee expectations and employee power** in the post-COVID-19 era will both normalise at higher levels than before.

How effectively CEOs and leaders in ENR companies deal with these shifts today will determine their ability to access the human capital required to realise their strategic ambitions.

01

Digitisation and decarbonisation

Technology and ESG are impacting jobs in ENR companies. Diffusion of digital technologies elevates 'soft skills' and decision-making capabilities in all jobs as routine and rule-based tasks are systematised. Decarbonisation, and broader ESG priorities are seeing some jobs decline and other new workforce priorities emerge.

KEY FACTS:

84 percent of Australian CEOs indicated an **acceleration** in **operations digitisation** and next-generation operating model creation as a result of the COVID-19 pandemic.[1]

Up to **36,931 ENR jobs** to be impacted by **digital labour automation** and **augmentation** over the next five years.[2]

There are approximately **100,000 'carbon workers'** in Australia whose roles may be affected by **decarbonisation**, and these tend to be concentrated in a relatively small number of regional locations.[3]

Demand for '**green skills**' could reach **400,000 new recruits** by 2050, 'more than half of them in roles that don't currently exist'.[4]

FEATURE

Digitisation and decarbonisation

Technology will continue to drive significant change in jobs across ENR and profound changes are already evident across Oil & Gas, Mining and Power & Utilities:

EXAMPLES OF CAPABILITIES REQUIRED ACROSS ELECTRICITY VALUE CHAIN

Oil & Gas

Remote drilling and fracking technologies have been adopted by three of the biggest oil-field service providers in the world, Baker Hughes, Schlumberger and Halliburton.[5]

Mining

Autonomous Mobile Fleet technology has made it safer, more efficient, and has reduced the reliance on a human workforce.[6]

Power & Utilities

Distributed Energy Resources (e.g. rooftop solar power) will fundamentally change the way electricity is generated, transmitted, and supplied to consumers.[7]

02

Talent competition convergence

ENR companies face headwinds attracting the talent they need. The attractiveness of ENR jobs to prospective talent has declined over the last 10 years. Roles in these industries are (rightly or wrongly) perceived to be unstable, dangerous, or part of the problem contributing to global warming. Demand for STEM talent, necessary to drive digital transformation and energy transition in ENR, is strong across the entire economy meaning ENR companies are competing for talent with organisations in consulting, manufacturing and healthcare. The cost to compete for talent in the open market will be higher than the cost of developing skills from within.

KEY FACTS:

48 percent of energy professionals were **concerned** about an impending **talent emergency**.[8]

Australian job vacancies are at historically high levels in **Mining (22.9 percent)**, and **Electricity, Gas, and Water** and Waste Services **(9.9 percent)**.[9]

WA The resources sector in Western Australia estimates it will need **40,000 new employees by mid-2023**, but expects to be 33,000 short without access to overseas skills.[10]

78 percent of employees would consider switching away from the energy sector if they were presented the opportunity.[11]

Only **3 in 10 energy leaders believe employees can be retrained** and upskilled to mitigate the impact of decarbonisation efforts.[12]

FEATURE

Talent competition convergence

Despite a COVID-19 dip, the 'war for talent' continues to rage and ENR companies are poorly equipped for the fight. ENR organisations are seen as less attractive to prospective younger employees. Oil and gas fares particularly poorly with many young people viewing the industry as dangerous, unstable, and bad for the environment. A recent poll revealed that only 18 percent of millennials and 6 percent of Gen Z'ers found a career in oil and gas to be very appealing.[13]

Attracting talent to ENR is a more pressing issue than for other industries		**However, attracting new and retaining existing employees in ENR is more difficult than other industries**	
29%	**56%**	**18%**	**78%**
of global CEOs rate attracting talent as #1 priority[14]	of ENR bosses worried about 'talent crisis'[15]	of millennials attracted to Oil & Gas[16]	would switch to a role in another sector[17]

Some organisations are also heavily reliant on workers nearing retirement age.

In 2015 Forbes predicted the 'great crew change', predicting that over half of the energy workforce will be retiring in the next seven years.[18] While this has not materialised the aging profile of the workforce remains a threat. Power and utilities companies are particularly exposed. The ABS reports that 20 percent of workers in electricity, gas, water and waste services are over the age of 55.[19]

The demand for technology skills overwhelmingly outweighs the supply.

This is driving the global technical skill shortage to its highest level since 2008.[20] STEM qualifications are in demand across a broad range of industries. KPMG analysis of the Australian labour market shows that ENR companies attract less than 2 percent of available STEM talent. Companies in professional service, manufacturing, construction, healthcare, and even retail trade secure a much larger slide of STEM talent.[21]

PERCENTAGE OF STEM TALENT ATTRACTED TO INDUSTRIES

Rank	Industry	Percentage of STEM Jobs
1	Professional, Scientific and Technical Services	20.8%
2	Manufacturing	12.6%
3	Construction	10.5%
4	Health Care and Social Assistance	9.9%
5	Retail Trade	8.8%
14	**Mining**	**1.4%**
16	**Electricity, Gas, Water and Waste Services**	**0.5%**

KPMG analysis of www.abs.gov.au

Competing in the open market for in demand STEM and green skills is expensive and inefficient.

The World Economic Forum puts the cost of reskilling a worker displaced by digitisation for a higher value role at approximately A$35k.[22] This is attractive when considered against the total cost of onboarding a new employee which can be as much as $80k based on KPMG analysis. **Building skills within also demonstrated a commitment to staff which will be rewarded with improved employee engagement.**

$35K AUD

COST OF RESKILLING A WORKER DISPLACED BY DIGITISATION

CASE STUDY

Nurturing talent of the future

Xodus unveils energy transition skills initiative[23]

In November 2021, Xodus received a grant of approximately US$2.18mn from ETZ Ltd to launch 'X-Academy', which will offer two-year mentored placements that provides re-skilling for positive change training opportunities for hundreds of people to work directly on initiatives to reduce emissions and accelerate efforts towards net zero. Non-profit X-Academy will reinvest training profits into further skills development, climate projects and enhanced methodology'.

03

Post-COVID-19 new normal

Employees and candidates are increasingly exercising their power in the labour market. As vacancies surge they are demanding more of employers. Flexibility, purpose and developmental opportunities are at the top of their list of demands. Compounding this, Australia is reliant on skilled migration from overseas to meet ENR industry skill needs. COVID-19 disrupted the flow of international talent but there is also evidence that more can be done to maximise the value of the diverse talent already available.

KEY FACTS:

Pre-COVID-19 one in every 67 jobs advertised on LinkedIn provided the **option to work remotely**, in December 2021 the figure was **one in six.**[24]

LinkedIn job ads with **remote working options** (not possible for many ENR roles) **attract six times as many applications** as other ads.[25]

Women represent only **32 percent** of the renewables workforce.[26]

Overseas-born female engineers have almost **three times the unemployment rate** of Australian-born female engineers.[27]

90 percent of workers would take a pay cut to participate in more purposeful work, but less than half of executives have a clearly defined decarbonisation plan.[28 29]

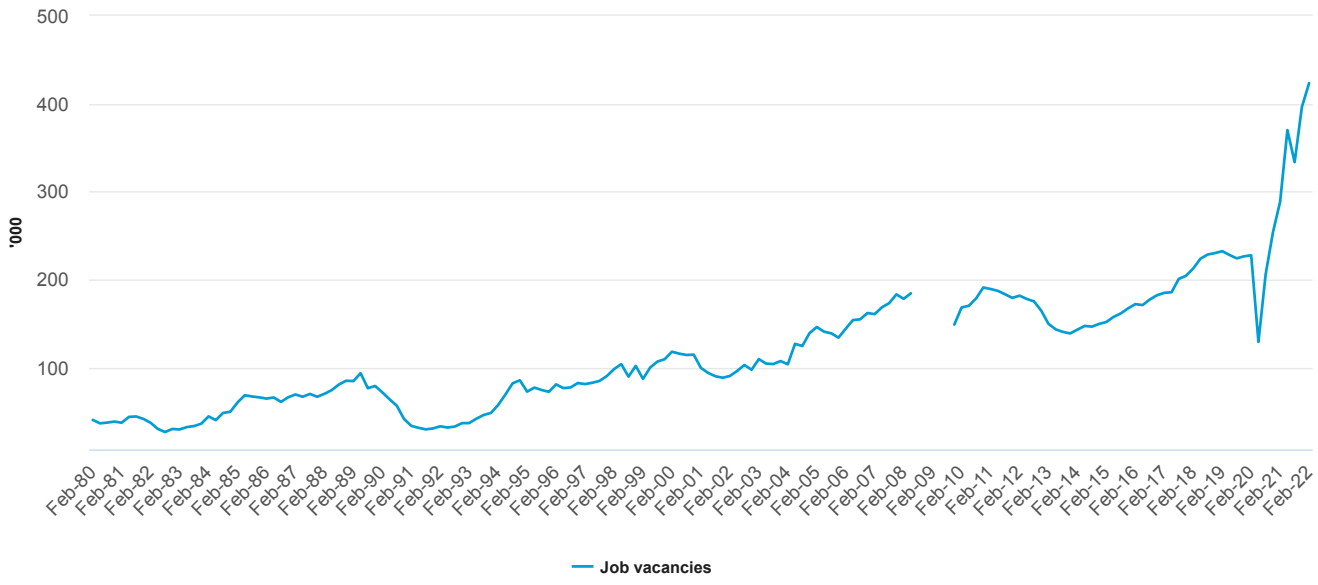
FEATURE

Post-COVID-19 new normal

Employers no longer 'call the shots' when it comes to talent.

Many skills are in demand due to global shifts toward digitisation and decarbonisation. With job vacancies at historically high levels employees and candidates are reconsidering priorities. More are demanding flexibility and development opportunities. Attracting international talent will remain important and ENR organisation should do more to maximise the value of the diverse talent pools

JOB VACANCIES, SEASONALLY ADJUSTED



The Job Vacancies Survey was suspended between August 2008 to August 2009 (inclusive).

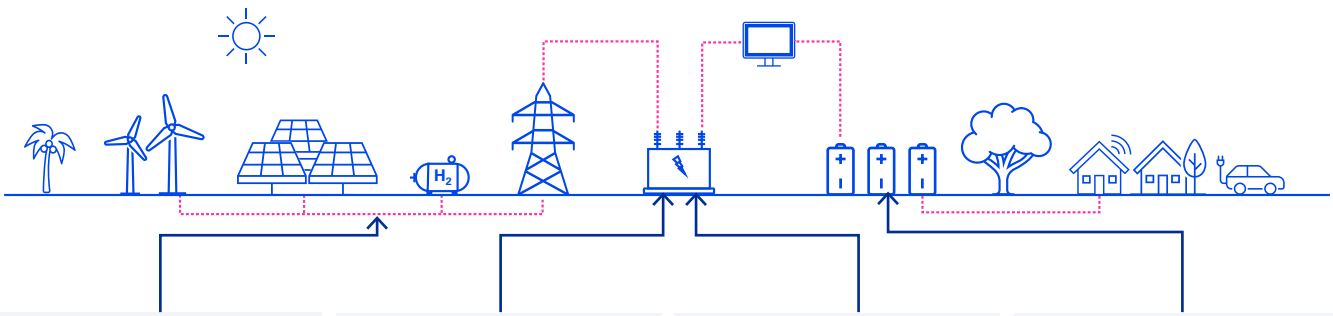
Source: Australian Bureau of Statistics, Job Vacancies, Australia February 2022

The rate of change is likely to gather pace. For organisations this presents an opportunity and challenge. New jobs will demand new 'hard', 'soft' and 'green' skills.

The workforce of the future will be more digitally-enabled and data-rich and increasingly comfortable with complexity. ENR companies will need new capabilities to develop, maintain, and operate digital systems and assets. Workers will need the capability to engage with digital systems and deal with the complexity that cannot be codified in algorithms. Some workers' jobs will change dramatically or disappear altogether as ENR assets are digitised and routine tasks are automated. This provides the potential to free employees to focus on higher value (and more complex) tasks. **Non-technical capabilities will come to the fore.**

Demand for human capital and emerging skills is surging. The talent emergency has been in part driven by a need for technological skills as the sector shifts toward technology dominant operations, and increased demand for resources, limited local availability of talent and inability to source talent from overseas due to COVID-19 pandemic travel restrictions. The Clean Energy Council reports the renewables energy workforce will more than double by 2023, with jobs and skills demand concentrated around installation, operation and manufacturing.[30]

IMAGE 1 – EXAMPLES OF CAPABILITIES REQUIRED ACROSS ELECTRICITY VALUE CHAIN



ENERGY GENERATION

- **Simulation (power loading and flow)**
- **Geo-spatial optimisation**
- **Field M2M communications**
- **Onsite H2 capacity storage**

TRANSMISSION & DISTRIBUTION

- **Advanced distribution management**
- **Fault detection and automated switching**

OPERATIONS & SUSTAINMENT

- **Robotics assisted inspections and maintenance**
- **Enterprise data analytics**
- **Network cyber security**

ENERGY STORAGE & SERVICE

- **Asset installation**
- **IoT and smart metering connectivity**
- **Onboarding and billing**

Organisations will need to focus on nurturing talent from within as an alternative to traditional talent sourcing approaches. Organisations should focus on upskilling and reskilling their existing workforce. Establishing transition pathways for workers in carbon intensive roles should be a priority. Analysis by ARENA of oil and gas roles suggest transferability to the renewable energy sector.[31] Developing transition pathways for fossil fuel workers would therefore not only support a 'just transition' but can play a role in addressing skill shortages.

Talk of the 'great resignation' may be exaggerated but many employees are taking advantage of the 'great renegotiation'.

This gives potential employees greater power to negotiate what they want, which is increasingly the flexibility and opportunities to work remotely. It is now more culturally acceptable to job-hop, so if people don't get what they want from an employer, they are prepared to leave, taking their skills and corporate knowledge with them. A 'brain drain' could hold ENR back from addressing the skills shortages in the future.

Employees are increasingly demanding more of their workplaces and employment conditions.

Workers entering the workforce today are more impatient, more accepting of individual differences and more demanding than previous generations. Not only do employees expect a consumer-grade employee experience, they also expect leaders who can simultaneously plot a course through ambiguity and disruption, and create a culture that is digital, progressive and flexible. Culture is an attractant of talent as diverse and inclusive cultures appeal to workers across most generations, especially important to millennials.[32]

The industry is also predominantly male and white.

Diversio research sampled 9,000+ employees globally and found that the ENR workforce was 67 percent male, and 78 percent ethnically white.[33] A survey conducted by IRENA revealed that women represent 32 percent of the renewables workforce.[34] This represents an opportunity to tap into more diverse talent pools and leverage the broader benefits of diversity, equity and inclusion.

Travel restrictions and border closures caused by COVID-19 have impacted organisations' ability to recruit.

The closure of physical borders has seen a 140 percent drop in skill migration between 2020 and 2021. Looking forward, international business travel is likely to take at least two years to return to pre-pandemic levels.[35] **More international workers may not fix the problem.** Overseas-born engineers have higher unemployment and significantly higher under-employment rates when compared to locally born engineers.[36] 47 percent of respondents indicated that international experience was not valued in Australia and 36 percent indicate that lack of local references presented an obstacle. The study also indicated that female engineers born overseas have almost three times the unemployment rate of Australian-born peers. **ENR companies should do more to leverage the skills already available amongst diverse talent pools.**

The pitfalls of managing human capital as operational costs

Australian CEOs identify talent acquisition and retention as their number one challenge. Paradoxically, executive attention on workforce related matters tends to focus on cost. Treating the workforce as an operational cost to be minimised rather than a form of strategic capital lies at the heart of the problem. The financial costs and risks of this approach are evident today and are amplified by the rapidly changing context ENR companies face.

FIGURE 2. THE IMPACT THROUGHOUT THE EMPLOYEE LIFECYCLE OF MANAGING HUMAN CAPITAL AS OPERATIONAL COSTS

RECRUITMENT AND ONOARDING	OPERATIONAL MANAGEMENT	RETENTION	REDEPLOYMENT OR EXIT
Direct costs (agency fees, recruiting effort, staff materials and resources (PPE, unform, etc.)	Paying more for capability through short term measures (e.g. temp and labour hire) and overtime	Lost productivity from disengaged workers	Direct cost of redundancy programs
Productivity impacts (lead-time to competency, impact on team)	Lost time and productivity due to 'critical resource' shortages	Avoidable recruiting to replace employee churn	Paying more to hire talent than to re/upskill existing workers
Risks and issues (inability to attract top talent, 'bad hire', etc.).	Increased safety risks working under pressure / overtime	Bidding-wars driving up the cost of labour	Social licence impacts of 'shedding' workers
	Lack of focus and poor IR / EB outcomes.	Risk of loss of institutional memory	Risk of redeploying workers into lower value roles.
		Flight of talent seeking development opportunities.	

These financial costs and risks are real and impacting ENR companies today, but they are avoidable. The figure below provides a quantification of the some of these costs and risks. In order for ENR companies to reduce or avoid these costs and minimise risk exposures, CEOs should start measuring, planning and protecting their human capital like any other form of capital. In the following section we explore how CEOs can take charge of their companies greatest asset: its people.

The human and financial costs of inaction

THE FINANCIAL AND HUMAN IMPACTS OF INACTION

The total cost of a new hire in mining:$79,800 per employee (44.8% of median salary)[37]

The direct cost of hiring activities averages close to $20,000.[36]

+

Personnel equipment (uniform, PPE, etc.) can approach $5,500.[39]

Time to proficiency and training costs can reach approximately $47,000.[40]

+

Impact on productivity of the onboarding team of $7,300.[41]

One unplanned absence can impact an entire shift (up to 20x impact)

A team may require multiple licences and registrations to perform work safely (e.g. cranes and hoists, construction, pressure equipment, rigger and dogger, driving plant on the road, etc).[42]

Individual productivity increases with team size, and optimal team size is estimated at between four and 20.[43]

Operators have sought to optimise work rosters and teams to minimise duplication and maximise efficiency resulting in teams that are 'one-deep' in critical skillsets / licences.

It costs between $20k and $30k to retain a STEM employee poached by a competitor

Moderate wage growth (1.3% in 2021) power and utilities underpins the ability to provide value to customers.[46]

Workers with in-demand STEM skills are securing retention pay rises of 20%+.[47]

Key STEM roles attract median salaries between $100 and $150k (and high performers much more).[48]

Three quarters of workers are open to offers and disengaged employees are 11 times more likely to be actively looking for other roles.[49]

Upskilling and reskilling save companies $45,300 per employee

In many cases roles will evolve (requiring the addition of new skills) rather than be displaced entirely.[56]

Lack of a clear career path and development opportunities is a key driver of employee disengagement (and related costs).[57]

The cost to reskill an employee to adapt to a new digital role is estimated by the World Economic Forum at $34.5k.[56]

Compared to the total cost of a new hire ($79,800), this can save an ENR company $45,300 per employee.

RECRUITMENT AND ONBOARDING | **OPERATIONAL MANAGEMENT** | **RETENTION** | **REDEPLOYMENT OR EXIT**

THE HUMAN IMPACT

Playing catchup risks safety and reputation

Efforts to recover lost productivity involving overtime place stress on the workforce.

Risks to worker safety increase by up to 61% with ad-hoc and overtime work.[44]

'Poor management' and 'stressful workplace' are amongst the top five causes of employee disengagement which further contribute to absenteeism (up 37%) and safety incidents (up 49%).[45]

What impact would media attention on a workplace fatality caused by pressure to reach production targets have on your company?

Can you retain workers you don't understand?

Millennials have a reputation for being motivated by career growth and prone to job hopping.[50]

Digging deeper, 90% of millennials want to grow their careers with their current employer and prize values alignment and learning above other job satisfaction factors.[51]

'Job hopping' appears to be a fallacy – more workers have been in the same role for over five years now than there were in 1992.[52]

Does your employee engagement survey give you the insights you need to retain your best talent?

ENR companies can not neglect the 'S' in ESG

Energy and manufacturing plant closures have an economic impact on communities (including higher unemployment) that lasts for many years.[53]

The impact of decarbonisation on communities is the topic of increased public scrutiny.[54]

Decisions made by ENR CEOs can cause major impacts on communities including real estate price drops that can leave unemployed former employees with negative equity.[55]

Does your company have a plan to manage potential social impacts of strategic changes?

How to maximise human capital

Organisations can take practical steps to manage human capital better. What is needed in many cases is leadership from the CEO-down. ENR CEOs who optimise their human capital have three distinctive capabilities:

01
They will plan ahead for future human capital use and needs

02
They will invest to maintain the productive capacity of existing human capital assets

03
They will make strategic investments to build new human capital assets.

Foundational capability: Strategic Human Capital Management

Human capital shares much in common with other forms of capital such as financial capital and intellectual capital and should be managed as such. Human capital can be measured and quantified. It can be invested effectively or poorly. Left unattended, its value will depreciate over time. However too few ENR CEOs apply the same rigour to human capital planning as is applied to financial planning and budgeting.

Mature finance functions will have structured processes for financial capital planning and performance management. This will typically involve elements including strategy development, business planning, reporting and assessment and gap remediation. As a result the CFO can determine to the dollar the performance of the company. A similar set of activities is necessary to optimise human capital as a strategic asset.

Strategic Human Capital Management is a foundation that supports further human capital optimisation. The clarity provided by the process can enable a more strategic approach to industrial instrument negotiations. It is also a launchpad for initiatives to maintain and improve human capital assets.

Questions the CEOs should ask:

- Is there a clearly articulated strategy for the management of scarce human capital?
- Is the strategy translated into specific plans for each of the principle operating units of the ENR company?
- Is human capital performance reporting accurate and timely? Have meaningful metrics and measures been identified?
- Are results analysed against plans? Is there a structured approach to addressing gaps?
- Are process and data governance mechanisms for human capital data fit for purpose?

These are foundational capabilities. If the answer to any of these questions is ‘no’, the ENR company is likely to be incurring costs and exposed to risks that are avoidable. These costs and risks are likely to grow as the forces of digitisation and decarbonisation; and talent competition convergence play out and the realities of the post-COVID new-normal crystalise.

BUILDING ON THE FOUNDATION:

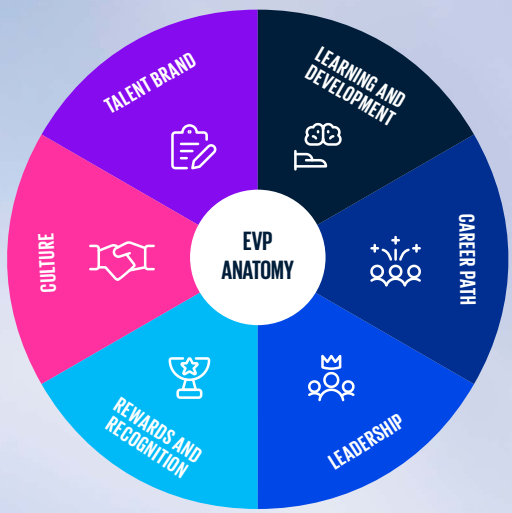
How to maintain and improve human capital assets

ENR companies that have established a strong approach to human capital management have in place the data and tools to support initiatives to improve human capital assets.

Maintaining Asset Effectiveness

Human capital like other forms of capital requires maintenance to maintain optimal performance. A holistic approach to maintaining human capital effectiveness can be achieved by considering the Employee Value Proposition diagram below.

Employee Value Proposition



A holistic understanding of the employee experience through this lens provides ENR CEOs with insights to fuel action to: understand the factors shaping attraction and retention of talent, and invest in development initiatives to maintain the relevance of workforce capabilities.

Industrial relations as a lever for change

It's easy to forget how talent within an organisation may either shape or be shaped by your industrial environment.

ENR organisations are all too familiar with an industrially charged environment – enterprise agreements (EAs) with typically complex, expensive conditions, active representation from many unions and frequent use of non-typical labour arrangements like labour hire and contracting.

So within this industrial context, many ENR organisations are asking: how can we afford and manage talent while remaining competitive, productive and flexible?

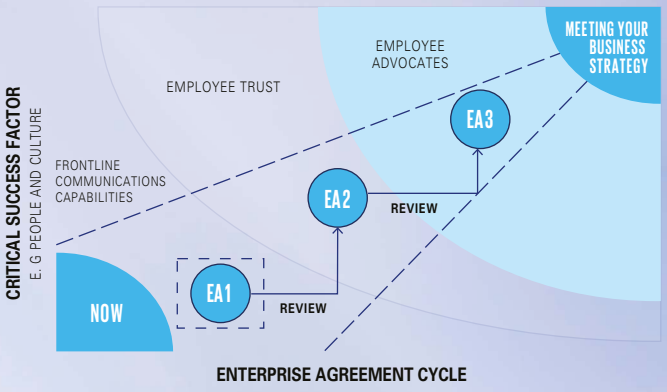
Like any other strategic priority, your industrial environment should be considered from a long-term perspective that is connected to the organisation's overarching business strategy.

Industrial relations should no longer be seen as a transaction or a cost, but a lever for change, that has a clear vision, and planned horizons that will help you reach your future vision.

In the diagram below, we show how mature ENR organisations think about their EAs strategically, and plan their EAs over multiple cycles rather than a response to their immediate environment.

Over time, this often requires building adjunct skills and capabilities. These can include the capability of frontline leaders to communicate any EA change, the ability to build employee trust that their leaders' good intentions will be reflected in the EA terms, and eventually, becoming proactive advocates for how the organisation operates.

How enterprise agreements can support strategy



How we can help

KPMG has a proprietary approach to Strategic Human Capital Management for ENR companies that integrates our workforce planning, asset engineering, regulation, and social licence capabilities. Bringing these capabilities together delivers outcomes that reflect the real-world context in which ENR CEOs operate.

Our approach empowers ENR companies to understand current and future human capital requirements and develop a strategic approach to talent attraction and retention. This ensures that they have the human capital needed to deliver their strategy. With our support clients have the foresight to plan for and avoid many of the other pitfalls and risks that can impact organisations managing workforce as a cost.

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Steve is a leader in KPMG's People and Change practice who understands the themes shaping the future of work over the next five years and beyond. He has a keen interest in all things digital labour, future of work, automation, artificial intelligence and robotic automation, and a passion for making sense of these topics for his clients.

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Reinventing work: The future focused workforce

Is workforce resilience part of the aged care solution?

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