



Drilling down

Oil and gas magazine

Third edition

Articles include:

Transition planning for oil and gas companies

Oil and gas opportunities in balanced portfolios

Proving environmental performance in natural gas markets

Capitalizing on energy policies and regulations



KPMG International

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Foreword

Reducing emissions in a way that meets customer needs and multiple stakeholders

Jonathon Peacock, Global Sector Lead, Oil and Gas, KPMG International

Leading up to COP28 in 2023, the oil and gas sector is coming under the microscope. That is as it should be: the oil and gas sector will be a key player in the global effort to reduce carbon emissions and transition to a cleaner energy future. Simply put, the energy transition cannot happen without the active participation of the oil and gas sector.

There are voices that advocate for oil and gas sources to be shut off as soon as possible. Yet the world is increasingly recognizing that hydrocarbons will need to remain a central component of the world's energy mix for the foreseeable future. Concerns about energy security, the risks of imposing energy poverty on the developing world and the voracious appetite for energy in the emerging markets are just some of the factors pushing energy demand to historic highs. Cutting oil and gas from the mix would only sharpen demand and raise prices for consumers.

To achieve Net Zero and deliver on the energy transition, it is not a question of renewables OR hydrocarbons. It's a matter of diversifying into a broader set of energy solutions. It's renewables AND hydrocarbons.

The challenge facing oil and gas companies is how to make that transition in a way that meets rising demand while simultaneously delivering on the expectations of stakeholders, investors, regulators and customers.

As our authors and collaborators argue in this series of articles, there are multiple paths to decarbonization and energy transition. And there are lots of opportunities right across the value chain to significantly reduce carbon emissions, scale up new revenue streams and diversify the portfolio. Technology will play a key role — understanding the various options and their relative value will be critical to developing a practical roadmap to a more diversified future. So, too, will the ability to develop strong partnerships.

For oil and gas companies, therefore, the focus remains firmly on delivering on their long-term goals and business objectives. And, for the vast majority, that includes living up to ambitious commitments to reduce or eliminate emissions.

KPMG member firms have some of the world's largest, most multi-disciplinary decarbonization and energy practices, serving many of

the world's top oil and gas players and suppliers. KPMG professionals understand the complexities and opportunities of the energy transition for oil and gas companies. And we would be keen to share our ideas and experience with you.

On behalf of the authors participating in this report, and the 1,500 energy and decarbonization professionals across the KPMG network, we encourage you to contact your local member firm to discuss your unique situation.

Sincerely,



Jonathon Peacock
Global Sector Lead, Oil & Gas
KPMG International

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Transition planning for oil and gas companies

As pressures increase for oil and gas to move toward renewables, we offer some advice for creating a practical transition plan.

Andrew McHardy, Partner and National Leader of the KPMG Decarbonization Hub, KPMG in Canada

Zachary Schwartz, Director, Infrastructure & Climate Advisory, KPMG in the US



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As the world moves towards meeting net zero carbon emissions, many industry leaders, consumers and stakeholders are looking to the oil and gas industry to play a significant role to meet these targets. Despite renewable energy growth, the proportion of fossil fuels in global primary consumption has remained relatively stable and as of 2022 was 82 percent.¹

How will the oil and gas industry influence the continued demand for energy while ensuring energy security, affordability, and sustainability are met?

Oil and gas companies can take a number of steps to support the energy transition beyond solely transitioning from fossil fuels. For

example, measures to reduce carbon emissions can include eliminating non-emergency flaring, electrifying upstream facilities with low-emissions electricity, equipping oil and gas processes with carbon capture, utilization and storage (CCUS) technologies, and expanding the use of blue hydrogen.

In many cases, energy transition involves diversifying company portfolios with various assets related to sustainable energy sources and innovative technology. (see Drilling Down issue 3, "Oil and gas opportunities in balanced portfolios."). This means using revenues from today's businesses to create future business models and revenue streams.

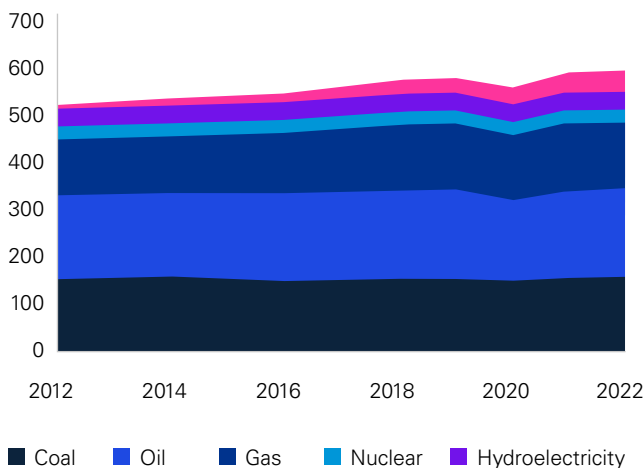


Despite renewable energy growth, the proportion of fossil fuels in global primary consumption has remained relatively stable and as of 2022 was 82 percent.

Fossil fuels remained at 82%, despite renewable growth

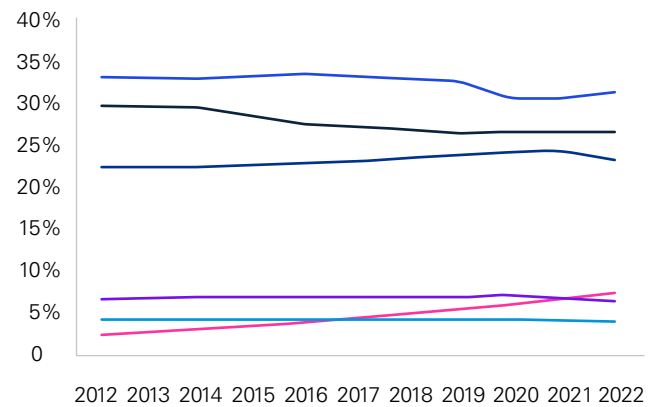
Primary energy by type

Exajoules



Primary energy shares

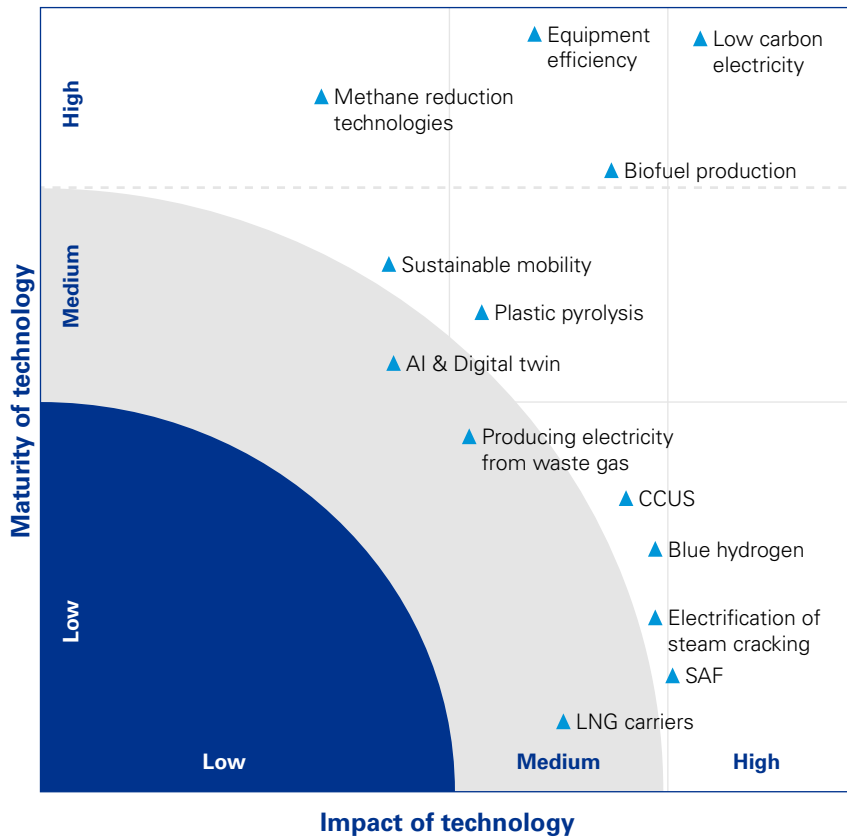
% of world consumption



Source: Energy Institute, in association with KPMG International and Kearney. "2023 Statistical Review of World Energy." 2023

¹ Energy Institute, in association with KPMG International and Kearney. "2023 Statistical Review of World Energy." 2023

Maturity and impact of technologies



Source: ETP Clean Energy Technology Guide, IEA, September 2023



While still in the earlier stages of deployment, AI's ability to digest massive amounts of complex, unstructured data and deliver interpretations and predictions makes it an important tool in determining how to reduce our carbon footprint. It's already helping companies make more informed decisions in the transition to lower carbon operations, including moving the dial on measuring, tracking and forecasting greenhouse gas (GHG) emissions reductions."²

Andrew McHardy
Partner and National Leader of the KPMG Decarbonization Hub
KPMG in Canada



² The Globe and Mail, October 25, 2023



Key factors in creating a transition plan

Knowing when and where to invest is not easy. Indeed, many oil and gas companies today need help to develop their transition plans and articulate their positions to their stakeholders. Leaders can start by considering the following factors:

- **What:** Knowing what new models or technologies to invest in can be challenging. We are seeing significant investment flow into various options such as CCUS, renewables, hydrogen, electric vehicle charging, biogases, and biofuels. We are also seeing some oil and gas companies look at new opportunities that leverage their embedded capabilities or play into future growth areas, such as the mining and processing of battery minerals. Every company's list of opportunities will be prioritized slightly differently depending on their ambition, objectives and strengths.
- **When:** The timing of investments is also a big challenge. Oil and gas companies are developing new energy capital assets using a phased approach instead of committing to the large capital project up front. Large projects can be broken into smaller phases to limit their exposure to market volatility at any given time. Oil and gas companies will only expand given the market economics makes sense. Ideally, you want to scale up as demand rises. However, demand for alternative sources has yet to materialize in some markets. That means that oil and gas companies should

start building partnerships and ecosystems of customers, providers and generators that can work together to raise demand and supply in tandem. The good news is that there are incentives and funding mechanisms available that could help reduce the demand risk and make funding more viable.

- **Where:** The financial incentives and business confidence created by the US Inflation Reduction Act (IRA) have helped the US emerge as a key competitor for alternative energy investment. Yet other markets are also developing attractive incentives for investors in key energy sectors. The trick is in knowing where to invest to maximize value globally. There could be a unique role to play in helping shape and address the energy agenda in developing and

emerging markets where oil and gas companies have existing relationships. Local supply chain capabilities and available skills will also influence where oil and gas companies choose to invest.

- **How:** There are many avenues of entry and expansion depending on the sector or technology. Options include investing in technologies, funding start-ups, or snapping up key value chain players. We believe that every avenue will require oil and gas companies to develop ecosystems and partnerships to execute their transition plans — whether to drive demand, create secure supply chains, embrace innovation or create new business models. Again, the available incentives could affect how those partnerships are formed and structured.



Moving forward with confidence

In the coming years, the goal is to strike a balance between reducing carbon emissions and ensuring energy security. KPMG oil and gas professionals work with companies across the energy sector to develop and execute their portfolio transition plans. Based on this experience, we suggest that oil and gas executives consider the following objectives as they work to balance and shape their portfolios.

- **Set a clear plan.** Markets and regulators want to see ambition in your transition plan, but they also want to see certainty. Be clear about your strategy, develop clear and measurable objectives and then focus on delivering on them.
- **Make smart deals.** Whether you want to recycle capital to fund new projects or snap up a value chain partner to improve vertical integration within a new sector, striking smart deals and partnerships will be key to success.
- **Articulate your narrative.** Tell the markets where you want to invest and what role you expect to play in the transition. But also be clear about your plans and expectations for the conventional energy side of the business.

Bringing the plan together

A checklist for a successful transition plan can include the following items:

- We have a clear understanding of where our Scope 1 and 2 emissions are as a business.
- We know where the biggest climate and sustainability-related risks and opportunities lie and have a plan to respond.
- We have clear plans on what levers are available to us and which ones we will pull in the short, medium and long-term to reduce our emissions.
- We are confident that we know the financing opportunities open to us for sustainable investments and the impact our transition will have on our balance sheet.
- We are regularly engaged with our supply chain, customers, and investors on climate and sustainability.
- We have an operating model and corporate structure which will maximize our flexibility in a net-zero world.
- We have clear roles and responsibilities on delivering, tracking, and reporting in our business on our climate and sustainability progress.
- We have climate and sustainability embedded into all of our finance systems, operations, and ways of thinking and investing.
- We have reliable and accessible data on our carbon emissions as well as other metrics to track our biggest risks and opportunities.
- We know what it takes to transition our business to hit our climate and sustainability ambitions and how to show that we are proactively taking action.





Case in point: Leveraging carbon offsets to support emissions reductions goals

Client challenge

A leading multinational pipeline and energy company needed to develop and implement a carbon offsets program to support their emissions reductions goals beyond 2030.

Program requirements included:

- Understanding how carbon offsets are used both globally and among their industry peers
- Identifying criteria for the evaluation of incoming risks and opportunities
- Developing and implementing a carbon offsets strategy in alignment with corporate priorities.

How KPMG helped

To support this program, KPMG professionals began with a current state, market, and peer analysis that

involved interviewing internal stakeholders to understand operational preferences and public commitments. They identified offset leading practices at the global and industry-sector levels and reviewed compliance requirements, market trends, risks and opportunities. They also developed guidance for offset use. The next step was to conduct an evaluation workshop that identified seven foundational offset principles and seven criteria for the evaluation of quality offsets. The KPMG team also provided educational sessions on factors affecting offset prices and conducted exercises involving criteria threshold-selections, criteria prioritizations, and case study evaluations.

Results of the workshop were incorporated into an evaluation tool that enabled a user to assign a grade for each potential offset project to a specific evaluation criteria. Output was ranked

according to potential offset opportunities in alignment with corporate priorities established in the workshop.

Benefits

With the support and guidance of KPMG, the client was able to develop a strategic pathway to the implementation of carbon offsets. This included a number of transaction opportunities involving:

- Co-benefits aligned to existing decarbonization and abatement plans
- Options for internal offset use and value chain partnerships
- A voluntary-versus-compliance usage approach.



Becoming ESG assurance ready

More than half of leading companies in energy and natural resources agree that digital tools are key to achieving ESG assurance.³ All leaders have largely or fully implemented digital solutions to collate ESG and other non-financial information, an area where energy and resources firms are well ahead of other industries.

Advanced technologies used for non-financial data capture/analysis

	Leaders*	Other energy & resources	All energy & resources	All industries
AI/machine learning	60%	58%	59%	49%
IoT	64%	48%	53%	62%
Cybersecurity	56%	46%	49%	57%
RPA	48%	32%	37%	30%

* Top 25th percentile of five areas (governance, skills, data management, digital technology and value chain)

Source: "Becoming ESG Assurance Ready: energy and natural resources sector, a report for KPMG," ThoughtLabs, August, 2023



Energy companies are under growing pressure for environmental, social, and governance (ESG) assurance, particularly from shareholder activists and investors, and from regulators looking to hold them accountable and curtail the prevalence of greenwashing.

In a recent report by ThoughtLabs sponsored by KPMG International,² these companies were found to surpass other industry sectors in ESG reporting:

- 64 percent of energy and natural resources companies report ESG disclosures in the public domain versus 56 percent of all companies.
- 17 percent of energy and natural resources companies that report in the public domain provide reasonable assurance over all ESG disclosures versus 14 percent of all industries

³ Becoming ESG Assurance Ready: energy and natural resources sector, a report for KPMG," August, 2023



Case in point: acquiring ESG assurance

Client challenge

A major oil and gas producer was seeking third-party assurance regarding Scope 1 and Scope 2 carbon emissions, as well as multiple other ESG metrics such as water usage and workforce diversity. The assurance was also needed to validate baseline data to be used in target setting and for projections used in scenario analysis.

How KPMG helped

KPMG professionals completed a risk assessment, including gaining an understanding of the reporting and control environment, determining materiality thresholds, and understanding target-setting exercises. Team members planned various assurance procedures such as remote site visits and reconciling source data to obtain sufficient and appropriate assurance evidence. The KPMG team also identified significant risks and material issues.

Benefits

KPMG professionals helped the client:

- Revise various assumptions that were based on outdated factors
- Align the definition and calculation methodology of metrics across different geographies
- Publish a detailed assurance statement along with a sustainability report provided to stakeholders such as investors.



About the authors



Transition planning for oil and gas companies



Andrew McHardy
Partner, National
Decarbonization Hub
Leader
KPMG Canada

Andrew McHardy is a Partner in KPMG’s Deal Advisory practice where he specializes in the planning and implementation of decarbonization solutions. This includes the production, storage, delivery and utilization of low-carbon energy, development of carbon capture and storage (CCS) infrastructure and other decarbonization solutions, and integration of renewable power, distributed energy resources and energy storage technologies. He has over 25 years’ experience leading multi-disciplinary engineering, consulting, and project teams to successfully deliver major projects, business transformation and operational excellence.



Zachary Schwartz
Director, Infrastructure &
Climate Advisory
KPMG in the US

Zack has more than a decade of experience supporting upstream oil and gas clients across four continents. His exposure to a diverse client mix has allowed him to help operators frame, evaluate, and develop plans for their strategic upstream and low carbon business ventures. He brings passion and sound analysis to guiding KPMG’s oil and gas clients in the energy transition, helping them evaluate the economic and environmental tradeoffs of CCUS, hydrogen, and upstream decarbonization investments.

Oil and gas opportunities in balanced portfolios

Proving environmental performance in natural gas markets

Capitalizing on energy policies and regulations

Next steps to energy transition goals

Oil and gas opportunities in balanced portfolios

Companies are approaching the energy transition in different ways but optimizing a portfolio can be an essential part of their strategy.

Wafa Jafri, Partner, Energy and Mobility Deal Strategy, KPMG in the UK
Adrian Scholtz, ENR Global Deal Advisory Leader, KPMG in the UK
Chris Wren, Director, Energy Transition Advisory, KPMG in the US



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Oil and gas companies will be essential in the global effort to reduce carbon emissions and transition to a cleaner energy future and that energy transition cannot happen without the active participation of the oil and gas sector. The role of a balanced portfolio is a crucial part of the overall strategy in the transition to cleaner energy.

With that belief in mind, the main question becomes what the oil and gas sector can do to deliver meaningful and sustainable progress on energy transition.

Industry leaders on the continued need for fossil fuels⁴

At a recent industry conference in Calgary, Canada, the CEOs of Saudi Aramco and Exxon Mobil expressed their support for the global transition to cleaner forms of energy, but they also agreed that oil will play a major role in this transition for decades to come to ensure security of supply and resilience.

“There seems to be wishful thinking that we’re going to flip a switch and we’ll go from where we’re at today to where it will be tomorrow,” said Exxon CEO Darren Woods. “No matter where demand gets to, if we don’t maintain some level of investment in the industry, you end up running short of supply, which leads to high prices.”

Alberta Premier Danielle Smith, whose province hosted the conference, added that energy must remain affordable and reliable. She also provided what may be a summary of the view held by many conference participants. “We are transitioning away from emissions,” Smith said, “we are not transitioning away from oil and natural gas.”



⁴ “Big Oil Shows Support for Energy Transition But on Its Terms,” Bloomberg, September 18, 2023

A variety of responses to energy transition

It is tempting to categorize the oil and gas sector neatly into those companies proactively embracing the energy transition and those that are seemingly rooted in traditional practices. However, today's oil and gas companies can best be described as energy companies, each with various levels of commitments and investments in energy transition.

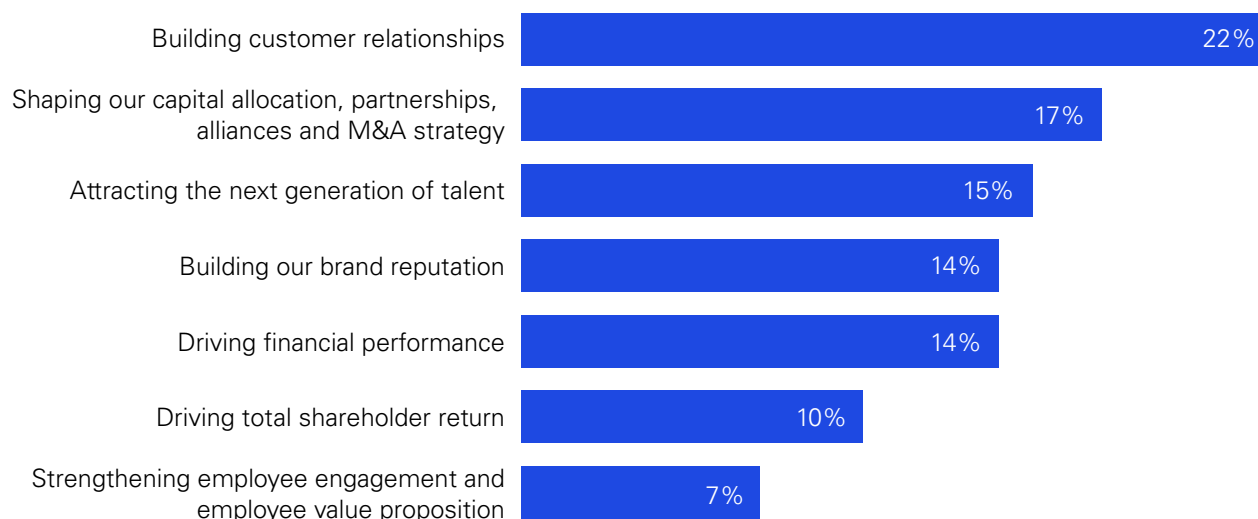
Some oil and gas companies are swiftly pivoting toward becoming sustainable energy providers. They are channeling significant amounts of capital and corporate resources into renewable energy and low-carbon technologies, underscoring

a vision for a future that leans toward a future of lower-carbon energy sources. Many of these companies have already pledged to achieve net zero Scope 3 emissions by 2050. These companies are not just adapting to change but often driving it, leveraging their expansive scale and expertise for innovative breakthroughs. Their key challenge is to discern exactly where and when to invest while gauging the appropriate scale of these investments.

Other oil and gas companies are harnessing their current capabilities and focusing on

adjacent energy transition technologies. Fossil fuels are still at the foundation of their business model, but these companies are also expanding into wind and solar, hydrogen as a green fuel, retail electricity, biofuels, and carbon capture technologies. In some cases, they are forging partnerships with emerging green tech startups. By keeping a finger on the pulse of multiple energy technologies, these companies are well positioned to effectively pivot in response to emerging technologies, regulatory shifts, and market demands in a rapidly evolving energy landscape.

Adoption of ESG strategy over the next three years



Source: KPMG 2023 CEO Outlook



Even with a variety of responses to the energy transition, a clear majority (78 percent) of ENRC CEOs in the latest KPMG CEO Outlook say they have fully embedded environmental, social, and governance (ESG) policies into their business to create value. Significantly, in an industry that has not always put emphasis on the customer, 22 percent of CEOs believe that ESG will have the greatest impact on their customer relationships over the next three years.⁵

The variety in strategies is also reflected in the M&A market globally where both the O&G and Renewables sectors are showing robust deals activities — with deal

values up 35 percent in the last 3 quarters for O&G, and renewables up 76 percent between 2022 and 2022 — only declining 5 percent in the last 3 quarters.⁶

By embracing this spectrum-wide viewpoint, there can be a more layered understanding of the energy sector, helping the world to recognize that corporate strategies stem from myriad considerations ranging from inherent operational strengths to market projections, stakeholder aspirations, and geopolitical dynamics. As a result, there can be more constructive dialogue about how best to support and accelerate the collective push toward net zero.



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⁵ KPMG 2023 CEO Outlook

⁶ "KPMG analysis with deal data sourced from Pitchbook and S&P Capital IQ (extracted November 10, 2023). Deal values are presented based on publicly available data and might not be exhaustive."



Key opportunities for oil and gas companies

The deep knowledge, experience, and capital resources of oil and gas companies can be leveraged to help accelerate the transition to sustainable energy. Here are several key opportunities for these companies, along with examples of industry leaders that are already supporting the energy transition.

- Develop a strategy that is focused on commercial key performance indicators (KPIs) such as revenue, return on capital employed (ROCE), and earnings before interest, taxes, depreciation, and amortization (EBITDA).
- Create a capital-allocation framework that supports resilience, cost optimization, and revenue opportunities in non-low carbon investments.
- Leverage partnerships involving joint ventures (JVs) as a way to reduce risk in new technologies and rapidly expand the organization's footprint.
- Take advantage of the US incentives markets around these technologies, including, for example, tax credits and the monetization and transferability of these tax credits through the IRA.



How KPMG can help

At events like COP28, oil and gas companies can showcase their initiatives and the role they can play in helping the world achieve its transition to sustainable energy. KPMG energy specialists can work with you to set your ambition, develop your roadmap and help you execute your strategy as you reorient your organization to succeed in the new energy environment. Support areas include the following:

- **Technology, policy and regulatory support:** We can help you identify enabling technologies, policies, and regulations that support the deployment of low carbon solutions across the portfolio, whether these are technology tools, subsidies, taxes or market regulation.
- **Strategy development:** KPMG professionals can provide advisory services to assist with market scanning and sizing, competitive landscape assessments and commercial/technical feasibility studies for innovative technologies.
- **Business model structuring:** We can aid your business with commercial advisory services, bringing strategy, finance and technology together to create a deployable opportunity.
- **Deal preparation:** KPMG can support with financial and tax due diligence as well as business planning and investment case development.

- **Deal execution:** We can assist with deal execution, integrating acquisitions into your portfolio and executing partnerships.
- **Integrations:** KPMG professionals can help integrate acquisitions into your core business plan, optimizing delivery, driving synergies, and reducing costs.
- **Operationalization:** We can provide support with operationalization, including tax, legal, and accounting advisory as well as technology solutions and data optimization.



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About the authors



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Wafa is an energy specialist with 10+ years of experience in the Energy industry (inc. Government and industry). She has extensive experience advising clients on their energy strategy and execution of their vision, based on her experience working in different energy markets (Europe, Asia, the US, Latin America, West Africa, and Australia).



Adrian Scholtz
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Leader
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Focusing on the renewables and low carbon sector for 12 years, Adrian advises major utilities, new entrants, financial institutions and independent developers across the spectrum of technologies and business activities (development, construction, asset value optimization and asset management). Adrian maintains a high profile across the European renewables sector, attending and speaking at a range of events and preparing analysis materials for key clients.



Chris Wren
Director
Energy Transition Advisory
KPMG in the US

Chris is responsible for enabling growth, building community, developing industry perspectives and helping build brand presence in the market across our Oil & Gas, Power & Utilities and Chemicals segments within our US Energy practice at KPMG. He works with the US leadership group across audit, tax and advisory to set and drive the strategic direction of the practice.



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If you want to make your 2050 energy transition goals, you need to be able to measure your progress.

Pravin Chandran, Managing Director, Climate, Data and Technology, KPMG in the US
Brooke Harris, Director, ESG — Energy Transition, KPMG in the US
Mark McDivitt, Chief Operating Officer, Context Labs



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The complexity of scaling renewables and geo-political shifts over the last few years has broadened the support for including natural gas as part of energy transition plans. Perhaps nothing highlights this better than the EU's decision to conditionally include natural gas as an eligible activity in the EU Taxonomy.⁷ As a result, downstream buyers, governments and even investors are looking for energy

companies to reduce the methane emissions associated with natural gas across the full value chain. And those energy companies that are able to deliver, have the potential to benefit, whether it be through higher revenues or increased market access. Accordingly, some natural gas producers and mid-streams operators are looking to measure, quantify and prove the carbon intensity of their products and activities.

One problem is that there are currently no standardized tools for measuring and reporting on the carbon intensity of a MMBtu of oil or gas from a particular asset. Some frameworks are emerging for methane emission intensity such as the UN's Oil & Gas Methane Partnership (OGMP) 2.0⁸ and the GTI Veritas Protocols.⁹ For the most part, however, carbon intensity is estimated using company-reported data and general industry benchmarks.

Better estimates are needed

Depending on what natural gas companies are trying to achieve, industry benchmarks may be adequate. If the goal is to conduct some internal measurement to inform decision-making and portfolio diversification for the energy transition, producers can use EPA or local estimates. These estimates can be fairly general and qualitative in nature, providing simple benchmarks to work from.

However, if the goal is to provide quantifiable reporting to key stakeholders, producers will likely need something more rigorous. Whether warranted or not, public perception of Oil and Gas companies continues to be sub-optimal and this creates a

need for real-world data that is actionable, aligned with claims being made by a company and is perceived as objective and reliable. And this is where another challenge presents itself — while there are growing number of data sources (satellites, continuous monitoring systems, etc.), yet they all face certain limitations whether it be resolution, coverage and/or cost. As a result, there is a need for solutions and standards that go beyond methane emissions tracking and reporting and provide ability to track and certify CO₂ emissions, measure end-to-end emissions, and demonstrate compliance with protocols such as OGMP 2.0 and GTI Veritas.



Whether warranted or not, public perception of Oil and Gas companies continues to be sub-optimal and this creates a need for real-world data that is actionable, aligned with claims being made by a company and is perceived as objective and reliable.

⁷ EU taxonomy: Complementary Climate Delegated Act to accelerate decarbonisation", European Commission, 2 February 2022

⁸ "The Oil & Gas Methane Partnership 2.0," OGMP.com

⁹ "The Oil & Gas Methane Part



Confidence through trust

This is where KPMG firms have been able to step in.

KPMG in the US has formed a strategic alliance with Context Labs, a leading enterprise data fabric-based climate analytics company based in Cambridge, MA and Amsterdam, NL dedicated to sourcing, organizing, and contextualizing the world's climate information.

Together, Context Labs and are helping Williams, a major US mid-stream gas company, to quantify the carbon intensity and energy efficiency of their pipelines and over 700 compression, treating and processing facilities across the countries. Context Labs used Asset Grade Data (AGD™) generated by their Immutably™ data fabric to perform reporting and analytics with their DaaS™ or Decarbonization as a Service™ offering.

KPMG then consumes data from Immutably through its Net Zero Carbon Analytics platform, performing calculations and analysis in parallel to further increase trust with Williams and buyers. The data from KPMG is tracked on Context Lab's blockchains and included in the certificate that was shared with Williams.

For example, in December 2022, Williams entered into an agreement with Coterra Energy and Dominion Energy, establishing the industry's first NextGen natural gas certification process across all segments of the value chain, from production through gathering and transmission. As a result of these efforts, Dominion Energy elected to procure verified low emissions natural gas from Williams and Coterra with emissions tracked end-to-end from well head to customer delivery. Through consuming certified low-emissions natural gas, Dominion Energy is able to prove a reduction of Scope 3 emissions by 120,000t of CO₂e per year.

Based on the success of this trade, Williams is now looking to expand the 'ecosystem' and include additional producers and down-stream buyers. Additionally, Williams is using information from Context Labs and KPMG to identify and repair areas of their infrastructure that are leaking methane, helping to further reduce the carbon intensity of their operations and improve energy efficiency. Finally, the company is starting to look ahead and evaluate how it can use Context Lab's and KPMG in the US' digital

capabilities with its broader energy transition goals, including to analyze, quantify and track carbon (CCUS) and hydrogen for different purposes (both commercial and reporting).



This approach provides a continuous source of trusted data for Williams, and companies like Williams, which they can repeatedly utilize for investor, stakeholder, and regulatory reporting and to accurately track their progress toward Net Zero and sustainability goals."

Matt Berchtold
Chief Product Officer
Context Labs



Monetizing improved performance

We believe that global natural gas markets are trending toward a world where buyers and regulators will hold companies accountable for improving their environmental performance and increasingly demand proof to support their claims. Companies that can deliver certified-carbon-intensity products are gaining a distinct competitive advantage. Oil and gas companies should be to consider leveraging trustable data to differentiate in the global marketplace.

Regardless of your objectives, digital proof of impact will become critical to accessing capital, attracting premium pricing, and mitigating risk—as well as credibly elevating the leadership role energy companies play in driving the energy transition.



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Pravin Chandran
Managing Director,
Climate, Data and
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KPMG in the US

Pravin is responsible for advising sustainability, low carbon and digital organizations on ways to automate ESG reporting, utilize analytics/AI to inform decarbonization and circularity strategies and prove environmental performance. He works closely with climate scientists, sensor technology companies, non-profits and software companies to analyze how to translate various types of emission data, climate models and climate standards into metrics that stakeholders can objectively evaluate. He helps his clients use these insights to access capital and drive revenue growth for companies that offer sustainable products/solutions. Finally, he leads efforts to implement partner applications and decarbonization platforms, as well as KPMG's proprietary capabilities.



Mark McDivitt
Chief Operating Officer
Context Labs

Mark is a leading expert on Environmental, Social and Governance (ESG) and financial markets. He has spent the last decade of his career demonstrating global thought leadership in ESG, culminating in his tenure as a global head of ESG, where he focused on data analytics and carbon trading. Prior to that he served in many leadership roles and also served on multiple advisory boards.



Brook Harris
Director, ESG — Energy
Transition
KPMG in the US

Brooke has 18 years of experience in the energy industry centered around the commercial and political aspects of upstream oil and gas exploration, as well as LNG and natural gas marketing. Brooke is a member of the US ESG team which provides deep ESG insight and capabilities to assist our clients across a wide range of challenges, including ESG strategy, climate/ decarbonization, social and economic development, sustainable finance, and measurement, reporting and assurance. Her expertise in carbon offsets and nature-based solutions enables the firm to help our clients navigate the risks and opportunities in environmental markets and beyond value chain mitigation.



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Capitalizing on energy policies and regulations

Governments are becoming more active in supporting their national energy transition goals.

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Drilling down

In 2015, almost 200 countries around the world adopted the Paris Agreement designed to hold “the increase in the global average temperature to well below 2°C above pre-industrial levels.” The Agreement also includes a commitment to “limit the temperature increase to 1.5°C above pre-industrial levels.”¹⁰

To achieve these critical goals, greenhouse gas emissions will need to be cut in half by 2030 and virtually eliminated by 2050. Leaders in both the public and private sectors acknowledge that meeting the Paris Agreement deadlines will

require compliance with several rigorous government policies and regulations.

Numerous countries, territories and regions have already established schemes to support a decrease in carbon emissions. The UK government’s Climate Change Act includes a commitment to a 100 percent reduction of emissions by 2050 compared with 1990 levels.¹¹ The European Green Deal aims for the same goal across its member states.¹² China’s latest Five Year Plan includes specific decarbonization targets.¹³ Saudi Arabia’s Public Investment Fund (PIF) supports a major

investment portfolio with a focus on sustainable investments, both domestically and internationally.¹⁴

Several markets — the EU and UK in particular — have focused on sharpening and ramping up their existing Emissions Trading Schemes (ETS). China launched their own ETS in 2021. The EU has more recently moved to extend its schemes by implementing the Carbon Border Adjustment Mechanism (CBAM), which is designed to reduce carbon leakage and maintain the competitiveness of EU member states.

Two ways to incentivize energy transition: European Green Deal and US Inflation Reduction Act

Today’s environmental policies and regulations are often behavior change oriented and designed to accelerate global decarbonization through commercial incentives. That, in turn, is encouraging new changes for the oil and gas sector in many markets around the world. The two leading examples of this type of legislation globally are the

European Green Deal and the US Inflation Reduction Act (IRA).

The European Green Deal aims at creating a net-zero green economy by 2050, enhancing manufacturing and digital capacity in crucial industries and sustaining innovation leadership via scientific and technological investment.

Achieving these goals will be facilitated, in addition of national tax incentives, by a high volume of non-tax incentives, including EU funds, national funds and the EU’s Covid-specific NextGen Fund.

¹⁰ “The Paris Agreement,” United Nations Climate Change Committee, United Nations, www.unfccc.int

¹¹ “The Climate Change Act 2008 (2050 Target Amendment) Order 2019,” UK Government, www.legislation.gov.uk

¹² “The European Green Deal: Striving to be the first climate-neutral continent,” Europarc Federation, www.europarc.org

¹³ “ASPI Climate Action Brief: China,” Asia Society.org

¹⁴ “PIF is driving the growth of new sectors, companies and jobs, as a catalyst of Vision 2030,” Saudi Arabian Government, www.pif.gov.sa





Key opportunities supported by the European Green Deal include:

- Financing the development of low-carbon industrial manufacturing
- Support for lower income EU member states toward climate neutrality
- Financing renewable energies — including hydrogen, wind, solar and biofuel
- Promotion of research and development
- Establishment of sustainable infrastructure in low-income member states
- Investments under the Important Projects of Common European Interest (IPCEI).

European Green Deal, like IRA, has a large scope and is in essence a large compilation of industrialization and innovation programs with a sustainability final goal.

The IRA is set to be the largest US congressional action on climate change, to date, with provisions that touch on a mix of energies — including wind, solar, nuclear, hydrogen, oil and gas, and biofuel — and climate-change prevention measures (such as carbon capture, battery storage, clean vehicles).¹⁷

According to American Clean Power, an industry group, nearly US\$350 billion in clean energy

Key opportunities supported by the IRA include:

- Investment Tax Credits (ITC) and Production Tax Credits (PTC) that are available to taxable business entities and certain tax-exempt entities eligible for direct payment of tax credits¹⁵
- Tax-credit increases involving factors such as meeting prevailing wage and apprenticeship requirements for construction projects and using domestically sourced steel and iron
- The monetization or transferability of IRA tax-credits, further opening investment opportunities for energy projects
- Potential creation of demand-side incentives for M&A transactions in industries such as solar, wind, and geothermal power generation, as well as electric transmission, lithium processing, and battery manufacturing¹⁶
- Enhancement of existing 45Q tax credit, which benefits facilities capturing and storing carbon dioxide
- Manufacturing tax credits to increase the domestic production of components needed for the energy transformation, including critical minerals, battery components, and others

investments were announced in the year after the IRA was passed.¹⁸ Another report suggests that more than US\$70 billion flowed into the US battery sector during the same period.¹⁹

There are signs that capital flow is already starting to shift to capitalize on IRA incentives and opportunities. Competition among markets for clean energy investment has ramped up considerably since the passage of

the IRA, and the Act is encouraging many governments around the world to reassess their own package of clean energy incentives and policies to become more competitive.

Corporations with major investment, decarbonization or innovation projects in the US or the EU might investigate if they are eligible for incentives related to the Green Deal or the IRA.

¹⁵ "Summary of Inflation Reduction Act provisions related to renewable energy," U.S. Environmental Protection Agency

¹⁶ "IRA: A Driver of Increased M&A Activity?," ESG Investor, September 30, 2022

¹⁷ Inflation Reduction Act, kpmg.com, August 2022

¹⁸ Investing in America," Cleanpower.org

¹⁹ "One Year On, Biden's IRA Has Changed the Battery Landscape," Benchmark Mineral Intelligence, August 15, 2023

Designed with oil and gas in mind

Not all oil and gas players have taken advantage of the incentives and benefits available through the IRA, the European Green Deal, and similar schemes. In part, that is because the oil and gas sector has mainly been self-funding, with limited appetite applying for government subsidies and incentives. Some companies are also concerned about the potential optics of an oil and gas company being awarded billions in taxpayer money.

Yet the reality is that these incentives have been designed for this exact purpose. Governments recognize that many low-carbon and sustainable energy technologies currently being developed simply aren't economically viable without government support.

Some aspects of various policy frameworks end as early as 2025. Oil and gas companies will want to explore their opportunities, and soon.

Steps to consider

The policies and regulations related to sustainable energy should be included in any business planning or portfolio diversification strategy. Based on KPMG firms experience in helping oil and gas companies make the most their opportunities in jurisdictions around the world, we suggest that organizations focus on the following three areas as they develop their energy transition strategy:

- **Understand the opportunities — current and future.** No two schemes are quite the same, and it will take time and insight to fully understand the implications and value of each. In many cases, this may require on-the-ground resources with local contacts and insight to help unravel the regulatory requirements and tax incentives in each market.
- **Carefully assess the data and reporting.** Accurate, comprehensive, and timely data is key at every stage of the process — data to develop your strategy, apply for incentives, report on results, and drive future investment decisions.
- **Elevate the tax function.** The tax function will become increasingly important to enabling key aspects of the oil and gas business strategy. Oil and gas executives will want to ensure they have the capabilities and capacity to support the company's tax posture.



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How KPMG can help

KPMG firms oil and gas professionals can work with you to set your ambition, develop your roadmap and help you to execute your strategy as you reorient your organization to succeed in the new energy environment. We can assist you with:

- Developing your energy transition strategy
- Assessing current progress and reporting capabilities
- Assessing opportunities for tax credits and other governmental financing
- Achieving alignment with regulatory, policy and other requirements
- Working with relevant stakeholders and helping you to build partnerships
- Shaping your portfolio for the future.



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About the authors



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Julie is a Director in KPMG's Washington National Tax — Credits and Incentives group. Julie has over 14 years of experience working on tax issues involving oil and gas, energy, chemicals, and natural resources industries. Her practice is focused on assisting clients with the tax issues present in the energy and natural resources industries, as well as the tax credits involved in the energy transformation. She is one of the primary authors of the I.R.C. § 45Q credit for carbon oxide sequestration regulations.



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Nicole has specialized in government grants and tax incentives for the past 12 years and has also specialized in carbon tax over the last four years. More recently, she expanded her areas of specialization to include the European Green Deal, specifically the Fit for 55 Package, when she joined KPMG's global tax and legal ESG team. She also has experience reporting and conducting audits in terms of International Standards on Auditing and managing regulatory assurance services concerning reporting.



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Ruth is Partner in the French law firm with an extensive experience in advising national and multinational players on Customs and international trade. Among classical Trade & Customs regulation her practice focus on ESG regulation with impact on cross border transactions. Ruth has a major experience providing guidance on a wide range of issues, including: circular economy, waste taxation, carbon emission taxation or international supply chain management.



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Trevor is a Partner in our Canadian Corporate tax practice with over ten years of experience in providing tax services to a wide array of publicly traded and private companies. Trevor provides clients with advice on tax planning, mergers and acquisitions, tax due diligence, income tax compliance and tax provision matters. He is a Group Study Leader for the CICA In-Depth Tax Course and a member of the Board of Directors of the Canadian Petroleum Tax Society. Trevor has experience advising clients in the Oil & Gas, Power & Utilities, Agriculture and Airline industries.



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The complexity of the energy transition requires collaboration among many players but with a defined strategy and clear objectives in the short, medium and long-term - reducing emissions and moving to net zero can be a reality. Below is an overview of what oil and gas companies should be considering as they consider the future of energy.

Next steps to energy transition			
	Short-term	Medium-term	Long-term
Value chain	<ul style="list-style-type: none"> Quantify emissions released at different stages of production. Identify emission-intensive processes across the value chain. 	<ul style="list-style-type: none"> Engage with suppliers and downstream consumers to reduce scope 3 emissions. 	<ul style="list-style-type: none"> Address residual carbon emissions through offsets and CCUS.
Policy and regulatory environment	<ul style="list-style-type: none"> Leverage existing regulatory environment to invest in clean energy and alternative feedstocks. Disclose category-wise emissions by following established standards. 	<ul style="list-style-type: none"> Collaborate with companies and associations to develop robust climate strategies. 	<ul style="list-style-type: none"> Scanning the long-term policy horizon and implementing transition plans accordingly.
Technology	<ul style="list-style-type: none"> Adopt mature and cost-effective technologies such as RE power generation, use of biomass feedstocks, LDAR. Switching from coal to natural gas in the near term, along with CCUS and blue hydrogen. 	<ul style="list-style-type: none"> Technological partnerships with key industry players. Deploying clean technologies being implemented at commercial scales. 	<ul style="list-style-type: none"> Embedding emerging low-carbon emitting technologies like CCUS, green hydrogen, etc. into climate strategy as well as improving their commercial viability.
Wider ESG considerations	<ul style="list-style-type: none"> Embed wider ESG considerations into transition planning approach. 	<ul style="list-style-type: none"> Strategically implement ESG initiatives into transition plan. 	<ul style="list-style-type: none"> Horizon scanning to address climate risks and impacts on workers and communities.
Levers and tipping points	<ul style="list-style-type: none"> Leverage existing government incentives for a clean transition. 	<ul style="list-style-type: none"> Develop infrastructure for business model innovation, e.g., development of sustainable fuels. 	<ul style="list-style-type: none"> Develop adaptation strategies addressing long-term climate change.
Metrics & targets	<ul style="list-style-type: none"> Set ambitious medium term targets aligned to a 1.5 degree scenario. 	<ul style="list-style-type: none"> Refine metrics as data availability evolves. Scenario analysis impacts of physical risks of climate change on business operations. 	<ul style="list-style-type: none"> Ensure that the Net Zero target includes emissions beyond Scope 1 & 2.



KPMG firms are trusted advisors

KPMG Oil and Gas professionals work with companies across the energy sector to develop and help them to execute their energy transition plans. Our people have helped businesses in the sector assess their opportunities, develop their plans, allocate their capital and report on their achievements. As a result of this expertise in assessing and addressing clients energy transition business challenges, KPMG firms are frequently identified as leaders in various key analyst reports.

KPMG achieves first analyst recognition as a global leader in climate consulting

According to the report, “KPMG leads in this Green Quadrant for climate risk, opportunity, and adaptation disclosures. KPMG consultants have strong regulatory expertise at the entity, portfolio and product level, with experience across both voluntary and mandatory frameworks, as demonstrated by the firm’s lead role on the Initiative Climat International (iCI) working group for Task Force on Climate-related Financial Disclosures (TCFD) implementation recommendations under the UN Principles For Responsible Investment (UN PRI).”

Read the full report [here](#).

Source: Green Quadrant: Climate Change Consulting 2023, June 2023

KPMG again rated most recognized energy and natural resources consulting brand



In a global survey of 325 energy and natural resources executives, directors and senior managers with purchasing power, KPMG firms ranked first for aided awareness — a measure of how quickly respondents selected firms they’re aware of. The study, carried out by Source, asked participants to select three brands from a list of the world’s top 15 consulting firms that they would be most comfortable talking about in detail.

In addition to being ranked as the top firm for aided awareness in energy and resources globally, KPMG firms were also recognized for strengths in helping clients get future-ready and prepare for expected and unexpected changes.

For more information, [click here](#)

KPMG recognized as a ‘World’s Best Management Consulting Firm’ in Energy and Environment

KPMG firms have been recognized by Forbes as one of the World’s Best Management Consulting Firms, receiving stars in all 27 industries and categories, including Energy & Environment.

Forbes awarded KPMG Energy & Environment professionals with a top five-star rating, for being “very frequently recommended” by thousands of customers and consultants in numerous countries around the globe.

The annual ranking recognizes KPMG for its capabilities in delivering insights-driven consulting services to commercial and public sector clients across the globe. Business leaders rely on Forbes’ annual list to help them evaluate management consulting firms as they seek partners to help drive forward their strategic plans.

For more information and to see the full rankings, [click here](#).



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