



Exploring trends in the Energy and Natural Resources sector and the strategic considerations for tax directors

2025 KPMG Asia Pacific Tax Summit

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01

Overview of Current Economic Landscape

The ENR Sector is rapidly transforming

Energy demand is witnessing conflicting trends

Record energy use & electrification

Global energy demand: + 2%
Global electricity demand: + 4%

Growing fossil fuel consumption

Gas saw the highest growth while coal consumption reached a new record high

Rising emissions

Energy-related CO₂ emissions rose for the fourth consecutive year, up by about 1%

Clean energy and renewables are accelerating

Record renewables growth

Wind and solar power generation: + 16%;
38% of global energy supply is renewables

Dominance of solar

Global solar generation has doubled in the last three years alone

Nuclear expansion

Construction starts for new plants: +50%
Dominated by Chinese and Russian designs

There is geopolitical and regional divergence

Regional disparities

Fossil fuel use flat in Western economies;
Renewables deployment slowed in Europe

Emerging markets lead

Asia drove energy demand growth with China accounting for more than 60% of the increase

Investment shifts

Capital into clean energy = 2x fossil fuels;
developing economies struggling for capital

There is potential to enhance value across the ENR value chain



Energy generation and production

Value preservation through focusing on core markets and technologies;—and aligning business model accordingly

Increasing returns through project pipeline prioritization and targeted project optimization

Leveraging AI enabled predictive maintenance in power plants, refineries and industrial assets to detect early signs of equipment degradation or failure.



Energy transmission and distribution

Enhancing value through grid optimisation and minimising transmission and distribution losses.

Leveraging technology and AI to enhance real-time pipeline and power line monitoring, helping prevent environmental damage, reducing service disruptions and improving safety and regulatory compliance across critical energy infrastructure.



Energy trading and market optimization

Creating value in carbon trading and emissions tracking by automating the collection, verification and analysis of emissions data across complex operations and using algorithms to accurately estimate carbon outputs, flag inconsistencies and ensure data integrity for regulatory reporting.



Customer and energy retail management

Enabling energy providers to deliver reliable, cost-effective and personalized energy solutions while optimizing customer engagement and reducing environment impact.

A combination of intelligent service and tailored insights enhances customer satisfaction, deepens engagement and supports the transition to more sustainable energy usage.



Sustainability, safety and regulatory compliance

Streamlining emissions monitoring and regulatory reporting by automating data collection, analysis and documentation across facilities and assets. This can reduce manual effort, minimize reporting errors and help energy companies stay ahead of increasingly stringent environmental regulations.

AI as enabler – Capacity augmentation, energy optimization, revenue maximization, process innovation

Diversification is essential to energy security

Novel renewable sources

- Novel wind systems, including high-altitude wind and vertical axis wind
- Bio-energy generation including algae-generated biofuels
- Piezoelectric devices to convert vibrations (e.g. on roads) into electrical energy
- Solar devices, including perovskite/thin-film solar cells and transparent solar windows



Green hydrogen

- Alkaline water electrolysis
- Proton exchange membrane electrolysis
- Solid oxide electrolysis cells
- Molten salt electrolysis
- Ceramic proton-conducting electrolysis
- Microbial electrolysis cells
- Photoelectrolysis infrastructure
- Pyrolysis and copyrolysis infrastructure



Carbon capture infrastructure

- Direct air capture systems, including mechanical trees
- Point-source capture for industrial emissions, including calcium looping and amine scrubbing
- Algae-based biologically assisted carbon capture
- Novel carbon utilisation techniques including mineralization of construction materials

Novel energy storage solutions

- Hydrogen fuel cells, including reversible solid oxide cells and proton exchange membrane cells
- Advanced batteries, including vanadium redox flow and multivalent ion batteries
- Battery repurposing/second-life systems
- Novel supercapacitors, including cement-based designs and ultramicro graphene-based solutions



EV and H₂ vehicle Infra

- Hydrogen storage and transportation infrastructure, including high pressure storage and catalytic systems
- Ultra-fast and robotic charging stations
- Wireless on-road charging systems
- Bidirectional vehicle-to-grid infrastructure
- Digital mobility service provider (MSP) platforms

Novel nuclear technologies

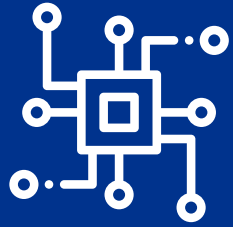
- Novel reactor designs, including modular reactors
- Advanced nuclear fuels, including high-assay low-enriched uranium (HALEU) and thorium-based fuels
- Magnetic and/or inertial confinement systems, including tokamaks, stellarators and laser confinement systems
- Advanced materials, including superconductors and plasma facing materials

02

Tax Landscape - Asia



Tax Landscape – Asia Pacific



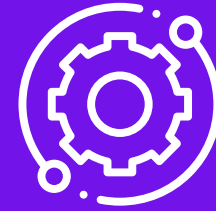
Pillar 2 rolls on despite US creating uncertainty

- Countries that have already implemented showing no signs of backing down
- Those who haven't showing no signs of implementing



Tax incentives becoming more targeted

- New incentives tend to be focused on sustainability
- Many countries still offering concessionary tax rates
- General reluctance to give out grants / QRTCs



Carbon taxes slowly being introduced

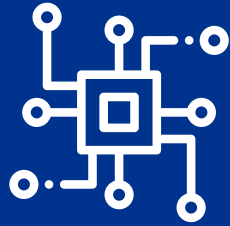
- Malaysia to implement in 2026
- Thailand approved the introduction of a carbon tax in 2025
- CBAM creating challenges for domestic regimes

03

Tax Landscape – Australia



Australia



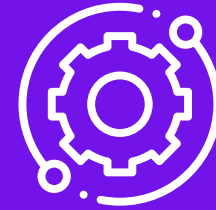
Australian Tax Landscape and Reforms

- Foreign Investment
- Funding and Capital
- Productivity Commission
- Incentives



Australian ENR and Renewables Landscape

- Simplification / Product Group Structure Reviews
- Traditional minerals vs renewables
- Attracting Investment and Capital
- AI

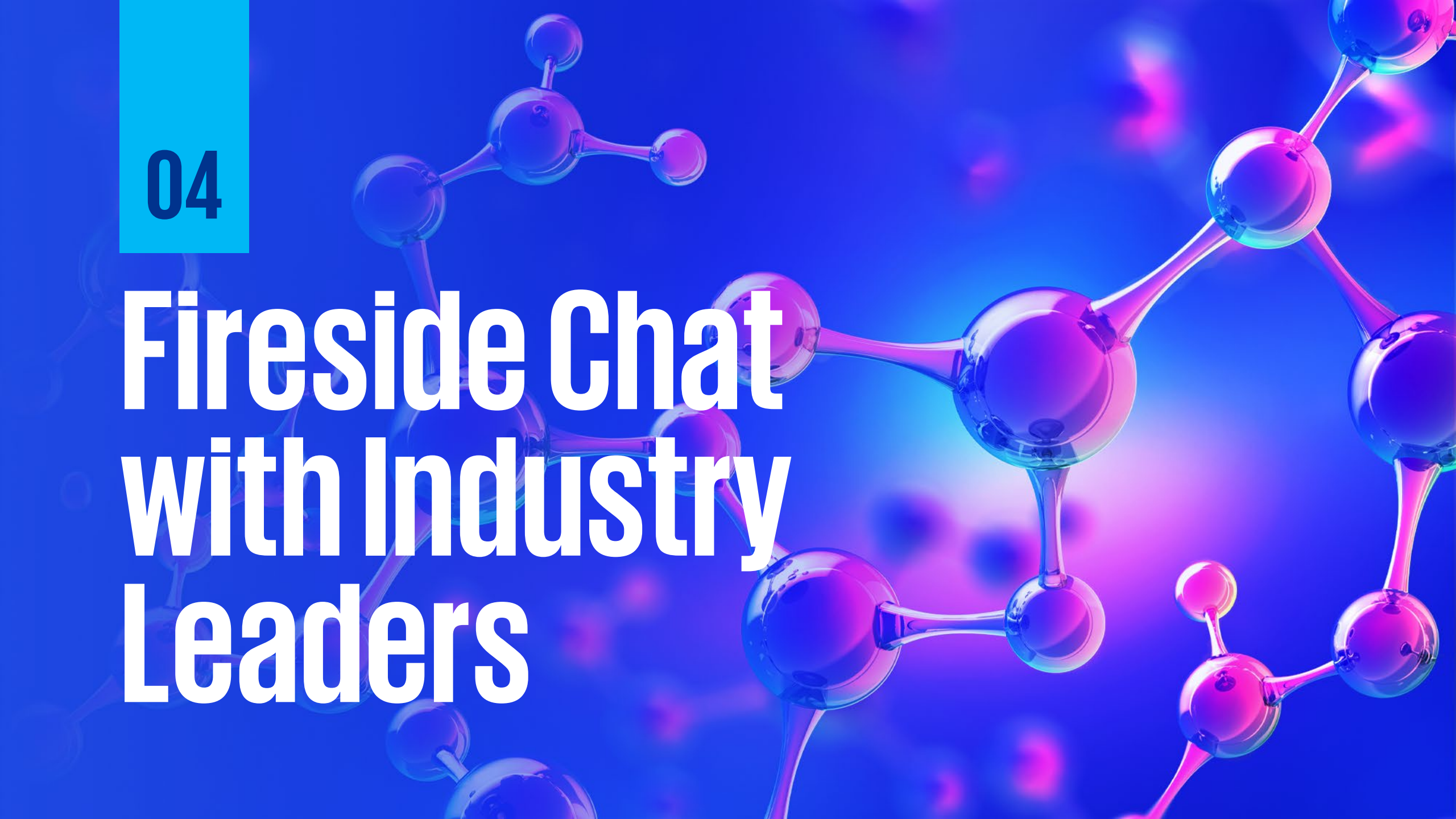


ATO Reviews and Audit Activity

- Capital Allowances
- International Tax
- Financing

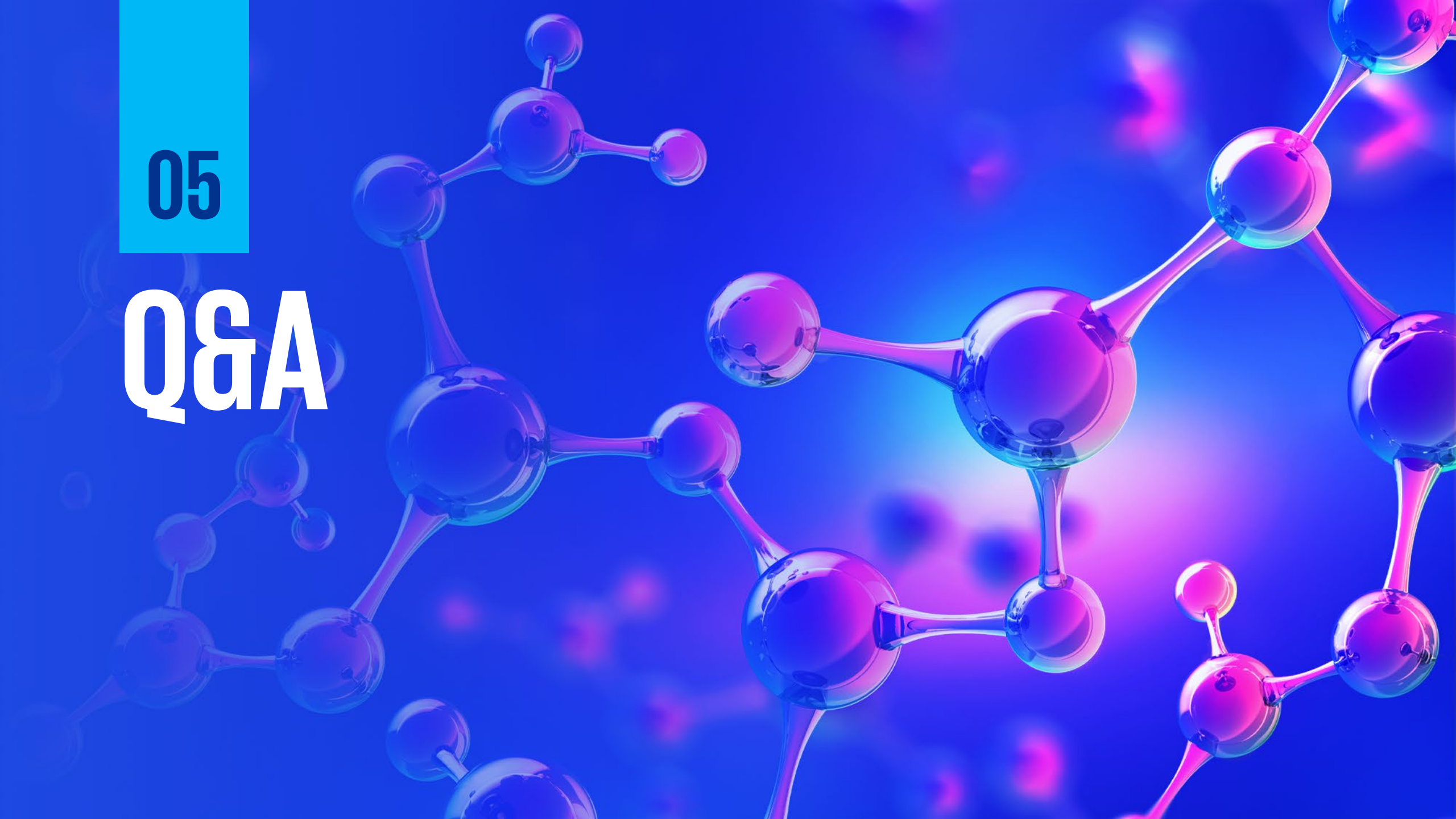
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Fireside Chat with Industry Leaders



05

Q&A





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