

S&P Global

Commodity Insights

CI Consulting

Accelerate
progress
with expert
guidance



The new era of energy welcomes new growth opportunities.

But it brings plenty of uncertainty and challenges too...

Factors influencing energy market dynamics:

- Rising consumer and investor demand for decarbonized energy
- Ensuring energy security, access, and affordability
- Economic growth priorities, fiscal policies and incentives
- Financing challenges
- Different realities and timelines by region and technology
- Geopolitics and supply chain disruptions
- Regulatory and policy changes

It's no surprise you're asking questions you've never asked before.

To take advantage of growth opportunities, businesses must navigate complex challenges.

That means getting to grips with changing market economics and pricing, risk management, strategic planning, operational efficiencies, compliance and regulations.



How can CI Consulting help?

By leveraging our best-in-class research platform, our consulting service brings you custom-built intelligence for a new era of energy. We're the ones who can answer your unique questions with unique solutions.



What we cover

Our sector coverage spans Energy and Commodities value chains with our expert consultants working across sectors, particularly in critical areas like Energy & Materials Transition, Decarbonization and Sustainability



Energy Transition & Decarbonization



Power & Renewables



Global Gas, LNG & Low-Carbon Gas



Oil Markets & Biofuels, Midstream and Refining



Chemicals



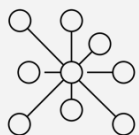
Oil & Gas Exploration & Production



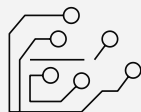
Agribusiness

How we help

We work with you to understand your challenges and develop tailored solutions that are right for your business. With our consulting service, you get:



An integrated view of the full energy value chain



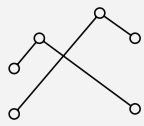
An unparalleled depth and breadth of proprietary data



Deep global and regional experience



Experts across each energy and commodity industry segment



Leading data, insights, tools and models



Transparent and independent analysis you can trust

Built on trusted foundations

Platts®
S&P Global
Commodity Insights

 **IHS Markit**
Energy & Natural Resources

CERAWEEK Chemical Week
by S&P Global

 **CERA**
Cambridge Energy Research Associates

 **PIRA**

 **PURVIN & GERTZ**
INC.

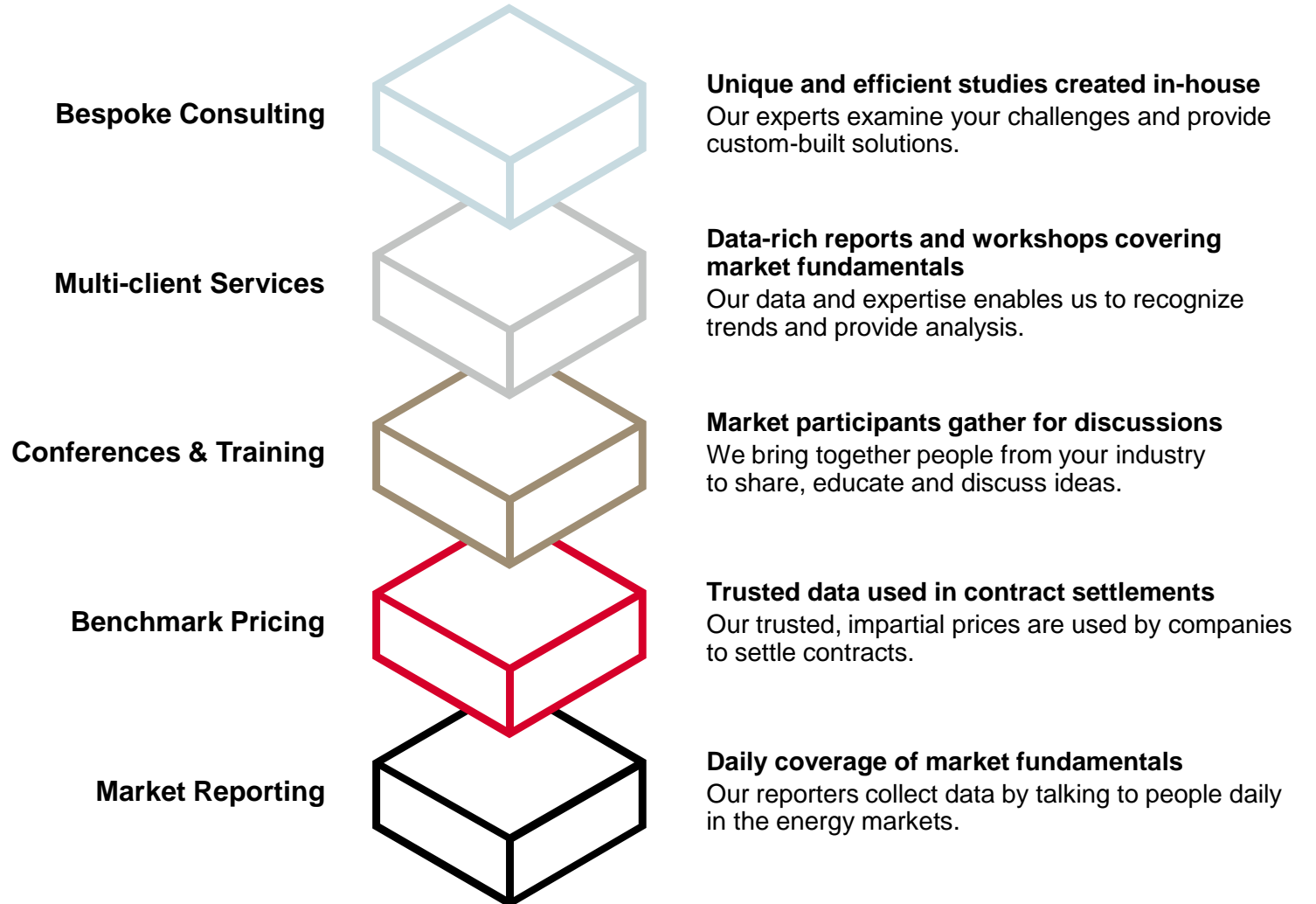
 **PFC** Energy

 **BENTEK**
Energy

S&P Global
Commodity Insights

Working together

Our Consulting solutions are based on a broad, solid foundation of market engagements and coverage.



How we help our clients

From operational management to strategic decision makers, we support a wide range of senior stakeholders.

- ✓ Strategically plan for the long term
- ✓ Evaluate assets and investment projects
- ✓ Support M&A with target screening and due diligence
- ✓ Benchmark against the competitive landscape
- ✓ Provide Commercial and Technical third part validation

Our Global Practice Leaders



Seba Borgarello

Global Head of
CI Consulting

"I'm passionate about helping my clients win in the new world of energy – and pushing the boundaries of what is possible."



Eleonor Kramarz

Energy Transition

"I'm excited by the energy transition and transforming complex problems into effective solutions."



Barclay Gibbs

Power and Renewables

"I give my clients a clear picture of the future – transforming complex challenges into clear opportunities."



Eric Eyberg

Gas, LNG & Low-Carbon
Gases

"I pioneer innovative energy solutions that drive long-term sustainability for some of the world's largest companies."



Anthony Wood

Oil Markets, Midstream
& Refining

"I focus on really understanding a client's need – and then using our unrivalled intelligence to help answer it."



Sanjay Sharma

Chemicals

"I believe that the chemical industry will enable the energy transition – we just need to embrace it."



Preston Cody

Upstream, Regulatory &
Energy Analytics Consulting

"I love helping clients use data to characterize the trade-offs between opportunity and risk."



Juan Sacoto

Agribusiness

"I'm excited to be at the forefront of agricultural innovation – and love turning my client's challenges into valuable opportunities."



Energy Transition & Decarbonization

Our team is at the forefront of the energy transition, providing insight and projections you need to reshape the energy landscape of tomorrow.

From speeding up solar, wind, and hydro projects to exploring new uses for battery storage, carbon capture, and green hydrogen – we understand the challenges of balancing energy demand with the need to reduce greenhouse gas emissions. That's why we're dedicated to finding solutions that enhance energy security, economic growth, and environmental sustainability.

We can help you with:

- ✓ Energy transition and decarbonization strategy
- ✓ Methane emissions reduction
- ✓ Emissions benchmarking & management
- ✓ Decarbonization roadmaps
- ✓ CCUS and carbon markets
- ✓ Low carbon hydrogen, ammonia and e-Fuels
- ✓ Renewable natural gas
- ✓ ET critical minerals
- ✓ Battery and Gigafactories

Case study

Pulse of Energy Transition



Challenge

An international gas company requested S&P Global to structure a dialogue approach that would provide comprehensive views and critical insights to navigate through the fast-changing global energy business environment.



Our approach

Our consultants executed a 3 phase project, as follows:

- **Energy Scenario Analysis:**
Provision of analysis and insight on S&P Global base case “Inflections” and greener outlook “Green Rules” scenarios that project energy use and emissions to 2050
- Provided client with **Energy Transition Signposts** - on-the-ground events and actions by key industry players and governments. Target industry sectors included: Upstream O&G, Gas / LNG, Power / Renewables and New Energies (CCUS, Hydrogen etc.)

- Scope of analysis: supply-demand outlook (near-term), price outlook (near-term), policies & regulations, key projects & investments, and technologies innovation
- Geographic coverage: global market while putting extra focus on the US market
- **Energy Transition Dialogue:** facilitated discussion on the direction and speed of Energy Transition / Decarbonization



Results

Based on the study work conducted, the CI Consulting team provided the client with insights, supported by bottom up data and integrated analysis, to map out and align its carbon neutral visions and strategies.

Case study

Assessment of impact of decarbonization for a global commodities & mining company



Challenge

The decarbonization of 'hard to abate' industrial sectors such as chemicals, steel, and cement is a critical aspect of the energy transition.

The client, a large Commodities & Mining company, approached S&P Global to support their internal strategic planning by assessing the impact of industrial decarbonization on their existing commodities business, and the potential for new business opportunities.



Our approach

- Using our comprehensive in-house global scenarios, S&P Global assessed the pace of decarbonization in key industrial sectors till 2050 under both a moderate and an aggressive decarbonization scenario
- Identified key technologies that will enable decarbonization of industrial sectors (such as electrification, hydrogen, CCS, recycling, etc.)
- Developed a credible decarbonization pathway for each industrial sector, highlighting the role of different technologies and the policy support required, e.g., through carbon pricing mechanisms
- Assessed how industrial decarbonization will impact demand for fossil fuels
- Analyzed the critical minerals within the supply chains of the major industrial decarbonization technologies to estimate demand growth for key minerals



Results

The client obtained extensive information and insights on the potential pathways to decarbonization for all major industrial sectors and geographies and the key technological and political drivers.

The client applied this learning to increase the robustness of their internal long-term modelling in support of their strategic planning activities.



Power & Renewables

The spotlight on renewable energy sources intensifies as the world undergoes a multi-dimensional shift towards a lower carbon future. This shift isn't just about embracing new technologies - but transforming the power markets to sustainably and reliably meet the world's energy needs.

Our experts are at the forefront of understanding the evolving dynamics in power and renewables markets. Covering all types of power generation and storage, we see both the evolving commercial opportunities and the emerging system risks.

S&P Global

Commodity Insights

We can help you with:

- ✓ M&A and commercial due diligence
- ✓ Scenario planning and strategic advisory
- ✓ Power system economics and transmission analysis
- ✓ National and regional market studies
- ✓ Integrated power demand forecasts including the role of AI datacenters
- ✓ Power procurement advisory and decarbonisation strategies

Case study

Market assessment and due diligence for utility-scale energy storage



Challenge

A NY based utility was seeking market advisory support for commercial diligence of ten utility-scale energy storage (battery) projects located in Long Island (NY Zone K).

The client and its joint venture required a deeper understanding of potential project sites and associated key risks facing their potential storage investments; the client also required a system benefits assessment to support a storage project proposal to an RFP from another utility company.



Our approach

- Modeled energy storage systems according to project specifications e.g., capacity, duration, efficiency, etc. and grid locations to support initial investment committee decisions
- Calibrated all battery sites under actual market conditions using the model to backcast an historical year
- Developed long-term (+12 yrs.) nodal energy forecasts and daily spread analyses, under both S&P Global's House View and custom cases defined together with client
- Explored sensitivities by varying timing of transmission upgrades, Offshore Wind (OSW) buildout assumptions, and zone J/K phase shifter technical parameters
- Assessed and ranked all sites for system benefits including production cost savings, Offshore Wind (OSW) curtailment reductions, and GHG emission savings



Results

The comprehensive evaluation of battery sites directly supported the client's investment decisions, site choices, and benefits quantification; the accompanying market report provided the private and system benefits for the prospective sites, enabling the client to pick and justify the location(s) to include in its competitive RFP response.

Case study

Southern African Power Pool (SAPP) strategy assessment for Infrastructure Investor



Challenge

S&P Global was commissioned by an Infrastructure Investor to conduct a commercial and technical review in to identify whether there are opportunities to develop new private interconnectors in the Northern part of the Southern African Power Pool (SAPP).

S&P Global was requested to provide an overview of the electricity market of the targetted countries, together with an assessment of the prevailing commercial framework within SAPP.



Our approach

- Analyzed demand, capacity, and generation for selected Sub-Saharan Africa countries up to 2050, supporting insights into export/import opportunities within SAPP for different scenarios
- Evaluated commercial opportunities for SAPP trading, considering power availability, import costs, and likely import/export routes, identifying potential transmission capacity needs
- Assessed risks associated with new interconnector development, considering SAPP's evolving trade landscape, liquidity constraints, network planning challenges, and regulatory transparency issues



Results

A comprehensive report was delivered to the client presenting an overview of S&P Global's conclusions in terms of SAPP countries that require additional firm capacity and their ability to develop new capacity in the next decade.

We also identified economically viable routes for new interconnectors and associated risks which ultimately informed our Client's investment decision regarding the opportunity at hand.



Gas, LNG & Low-Carbon Gases

As governments and organizations aim for a lower carbon future, they're turning towards clean-energy technologies. But we still need traditional fuels like natural gas and LNG, along with emerging low-carbon gases like hydrogen, synthetic methane, and renewable natural gas (RNG), to power our world and support decarbonization.

Our experts understand the pivotal role that the gas market plays in this transition. They see the potential of adapting existing infrastructure to transport cleaner alternatives. Because a sustainable future, will take both old and new energy solutions.

We can help you with:

- ✓ Gas markets pricing, contracts and regulatory design
- ✓ Gas masterplans
- ✓ Gas monetization and LNG shipping
- ✓ Emissions mitigation and low carbon gases
- ✓ M&A due diligence and project financing

Case study

Gas monetization strategy for development of an Argentina LNG export facility for a national oil company



Challenge

A national oil company engaged S&P Global to provide an independent assessment of various gas monetization options for the Vaca Muerta resource basin to support the potential development of a world-scale LNG facility and to identify other material and economic gas monetization opportunities.



Our approach

S&P Global conducted a multi-phased study that included a deep-dive market fundamentals report, including forecasts of supply, demand, pricing, regulation, and above-ground considerations; developed and modeled various demand driven scenarios, highlighting changes in the LNG, industrial, petrochemical, and fertilizer markets, and assessed the scenarios upstream implications.

S&P Global then performed netback analyses for 7 potential gas monetization routes, including LNG exports, pipeline export expansion opportunities, urea/ammonia investment, and petrochemical opportunities. This analysis then complemented a benchmarking exercise to help our client better understand potential infrastructure investment requirements, policy considerations, and potential synergies amongst the various monetization routes.



Results

The project has since moved forward with a land deal and FID announcement from key commercial counterpart and upstream gas partner.

The client gained a much clearer understanding of the challenges and obstacles required prior to making a significant investment, allowing it to better frame its strategy and target potential upside synergies amongst monetization options.

Case study

US biomethane market: demand & supply assessment, project economics, and market entry strategy



Challenge

An O&G company is looking to explore opportunities to produce biomethane in the US. They asked S&P Global to assess biomethane production potential, project economics, monetization opportunities (e.g., LCFS, voluntary markets), and competitive landscape across various regions in the US and develop a market entry strategy.



Our approach

- Leveraged granular datasets to assess regional biomethane market supply and demand potential (e.g., facility-level) and project economics across 9 key regions in the US, taking into account regional policies, market trends and availability of various feedstock (e.g., agricultural waste, landfill)
- Assessed biomethane production costs by location/feedstock and evaluated carbon intensity/monetization strategies (e.g., carbon market, LCFS, RIN, cost premiums) to pressure test project economics for various supply options
- Identified a shortlist of low carbon gas production opportunities in the US (e.g., types of feedstock, locations, production pathways), taking into consideration growth potential, project economics, feasibility (e.g., access to infrastructure), our client's capabilities, risk appetite, and strategic priorities and competitive landscape
- Evaluated potential business models to scale up production and developed tactical roadmap/market entry strategy to enter into US biomethane production market



Results

The client developed a comprehensive fact-base and understanding of the US renewable natural gas market and identified a shortlist of investments areas and potential business models to inform the development of their market entry strategy.

Oil Markets, Midstream & Refining

With an increased focus on climate change concerns and sustainability, shifting consumer habits are impacting the refining industry in an unprecedented manner.

Our proprietary research and data covers crude oil, refined products, natural gas liquids, lubricants, downstream company strategies, and the future of mobility.

We can help you with:

- ✓ Refinery competitiveness
- ✓ Refinery decarbonization strategies
- ✓ Energy Transition scenario planning and roadmaps
- ✓ Low Carbon Fuels: biodiesel, ethanol, renewable diesel, SAF, and e-Fuels
- ✓ Transaction and financing support
- ✓ Market and feasibility studies
- ✓ Crude oil valuation



Case study

Sustainable feedstocks availability assessment



Challenge

Our client had questions about lower net carbon feedstocks of interest and needed answers.



Our approach

- Reviewed the regulatory landscape to understand the drivers for growth in energy transition and sustainability
- Generated an outlook for the supply of sustainable feedstocks in olefins, hydrogen, ammonia and methanol
- Reviewed the impact of S&P Global Commodity Insights' (SPGCI) alternative Energy Scenarios and Net Zero Cases on the sustainable feedstocks supply outlook
- Reviewed technology pathways and their CO₂ footprints vs incumbents
- Generated a cost analysis to understand the outlook for the cost adders of bio-feedstocks over conventional feedstocks over time
- Integrated SPGCI's view of CO₂ price outlook under different scenarios into the cost adder analysis
- Analyzed the timing of expected cross overs, i.e. when sustainable pathways become more cost competitive than incumbents



Results

The client had a clearer view of bio-feedstocks availability, cost adders evolution, and sustainable pathways development so they could make more informed decisions. The client also requested a follow-up study for business-line and location-specific opportunities for sustainable feedstocks availability.

Case study

Benchmarking analysis and strategy development



Challenge

A major client for a North American refining and marketing company wanted to see how competitive it was against its peers, across each of their business segments.



Our approach

- Utilized S&P Global Commodity Insights' (SPGCI) benchmarking expertise and data resources, along with client data, to provide a clear picture of the client's relative competitiveness in each of the major supply chain segments including refining, outbound logistics, wholesale, and retail
- Developed market context to understand how local markets and geography played a role in financial and operational performance
- Identified specific opportunities where the client could improve operations and grow the business
- Developed a medium and long-term strategy for each of the business segments



Results

Senior management, planning and operations staff, and the Board of Directors were given clear actions to encourage future growth.

Chemicals

Every industry, from agriculture to energy to retail, relies on chemicals at some stage in the production process. To stay ahead, you need a deeper understanding of market volatility, regulatory pressures, cost competitiveness and shifting end user demand.

Our chemicals consultants have experience advising chemical producers, governments, financial institutions and technology providers operating at any point along the value chain, from commodity to specialty chemicals.

We can help you with:

- ✓ Materials Transition
- ✓ Plastics Circularity
- ✓ Decarbonization strategies
- ✓ Market studies for commodity and specialty chemicals
- ✓ M&A due diligence and project financing
- ✓ Process technology and production cost economics
- ✓ Feasibility and techno-economic studies

Case study

GHG footprint analysis



Challenge

A major chemicals producer was considering building propylene production capacity and wanted a better understanding of the GHG footprint for potential processes and capacity, and how they would compare to other propylene sources.



Our approach

- Developed carbon footprint estimates for the processes involved in propylene production e.g. refining, steam-cracking, propane dehydrogenation, coal to propylene
- Estimated the total footprint for the planned facility based on the client's plant configuration, co-gen and estimated emissions for individual process steps and feedstocks
- Assessed multiple scenarios for production steps/sources e.g., four specific cases for electricity generation
- Assessed project-specific estimates in comparison to other regions, and potential processes for production manufacture



Results

The client was given multiple scenarios which would result in the the lowest GHG footprints and total project emissions. From this, they could see how they compared to other producers and regions and were able to make an insight-led decision about the project's viability.

Case study

Chemical industry emissions study



Challenge

A client needed help understanding current and projected carbon emissions for chemical value chains to help them develop a quantitative baseline that considered potential carbon abatement methods.



Our approach

- Compiled asset-level production data (capacity, utilization rate, processes, feedstocks) and commercial data (demand, s/d, trade) for over 50 products and 500 assets across North America from 2019-2050
- Developed modelling breaking down individual emissions producing components – both direct and indirect – for each product and process's value chain, including upstream feedstocks, energy required (source and amount) and process-related emissions
- Utilized datasets to develop emissions factor estimates for each process and component of each product and product family's value chain
- Combined data sets to create CO₂ emission estimate forecasts (2019-2050) of carbon emissions from each product and product family
- Assessed water consumption for each product, which considered process, cooling and steam requirements



Results

The client used the final model to establish a chemical industry baseline number which helped them assess their carbon abatement options.

Oil and Gas Exploration & Production

Converging market forces, including rising shale production, lower oil prices and geopolitical developments, are dramatically reshaping the global oil and gas industry.

As the pace of change accelerates, corporate and government leaders must make confident, insight-led decisions.

Our consultants can help you identify exploration and production opportunities including carbon capture, utilisation and storage (CCUS) options, that promise optimal growth, prioritize investments, drive innovation, manage risks and reduce costs.

S&P Global

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We can help you with:

- ✓ Policy/regulatory support
- ✓ Bid-rounds support
- ✓ Upstream decarbonization strategy
- ✓ Performance benchmarking
- ✓ Supply chain market intelligence
- ✓ Transaction and financing support
- ✓ Cost assessments
- ✓ CO₂ storage screening and evaluation

Case study

CCUS value, deployment challenges and opportunities for Brazil



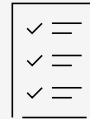
Challenge

CCUS is gaining momentum as a growing number of countries set ambitious climate targets and recognize the potential of CCUS. A client engaged S&P Global to support and evaluate the CCS potential in Brazil and to develop a roadmap for deployment of the first CCS hub/cluster



Our approach

- Identified and estimated capacity and costs of geological storage opportunities
- Identified abatement alternatives for various sectors and developed a CCUS abatement cost curve at the facility level
- Provided a policy overview of key international CCUS experience and compared these with the proposed guidelines for CCUS Legal Framework in Brazil, identifying potential gaps
- Provided a high-level assessment of the economic impacts of CCUS infrastructure investment and deployment across key sectors within Brazil
- Determined key regions for CCUS hub/cluster in Brazil to optimize the regional CO2 capture, transport and storage and created a roadmap with milestones, for a large-scale deployment of CCUS hubs



Results

Provided a roadmap for CCS deployment in Brazil, that evaluated the capture and storage potential by location, This is being used by the client as a starting point for engaging on a pre-conceptual design study for the development of the first hub.

Case study

GHG emissions management



Challenge

A Latin American NOC wanted to develop a digital platform to map and manage the GHG emissions from its operations and develop new sources of low-carbon revenue.



Our approach

- Helped develop a vision for an effective emissions management solution, leveraging the technology environment
- Guided a series of innovation workshops, along with Microsoft, to determine and develop a visualization for the platform
- Developed a joint understanding of needs and a shared vision for the solution concept and emission management platform strategy for the industry
- Crafted a vision demonstrator, value props and platform based on abatement cost and abatement impact
- Planned next steps for validation and further outreach to stakeholders
- Defined rapid prototyping and “deep proofs”
- Collaborated with stakeholders to develop a high-level execution roadmap for the digital solution



Results

The solution and roadmap gave the company's CEO and Board the tools to develop and implement the suggested digital platform.

Case study

Policy Screening and Analysis of Decarbonization Regulatory Frameworks



Challenge

A major oil and gas company asked S&P Global to provide in-depth analysis of decarbonization policies in 13 jurisdictions in Asia covering topics including:

- CCUS
- Carbon Pricing
- Hydrogen
- Nature Based Solutions
- Low Carbon Fuels
- Sustainable Aviation Fuels; and
- E-mobility.



Our approach

- S&P Global provided in-depth analysis of the regulatory framework for each jurisdiction, focusing on:
 - Policy instruments
 - Regulatory framework and applicable standards
 - Commercial arrangements
 - Information and reporting requirements
 - Regulatory trends
- The analysis also provided information on key drivers and challenges to energy transition as well as outlook for policy development in the region



Results

The analysis provided the client with greater strategic clarity for the short-term and long-term investment opportunities in the region, by gaining a better understanding of the regulatory framework and the policy direction of the governments in the specific Asian economies.

Agribusiness

From chemicals, machinery and fertilizers inputs, to commodities, food and by-products outputs, we are the only expert consultants which cover the whole agribusiness value chain.

This includes policy, transportation, finance and regulation which are applied at every step.

We can give you a holistic view of inputs, through producers and food manufacturers, to transport, bio-energy and biomass, policy and sustainability.

We can help you with:

- ✓ Bio-feedstocks and biofuels
- ✓ Market & feasibility studies
- ✓ Supply chain evaluation
- ✓ Policy & regulations support
- ✓ Climate change scenarios and impact on agriculture
- ✓ Fertilizers markets
- ✓ Transaction and financing support

Case study

Refining and biofuels industry study



Challenge

A petroleum refining company was considering converting existing crude oil refineries to renewable diesel plants. The client wanted to gain a better understanding of how the refining and biofuels industries overlap one another, in particular the role of agriculture on biofuels.



Our approach

- Looked at the overall biofuels market, supply and demand dynamics, and policy fundamentals.
- Incorporated outlooks for the agriculture and downstream oil industries as well as biofuels and policy considerations.
- Developed models and scenarios specific to the refineries being evaluated for conversion, with the scenarios defined by projections of how the oil and agriculture industries might develop in the future.
- Delved into the agricultural feedstocks for biofuels production and the economics of the market locations for the facilities the client was considering converting.



Results

The client gained a comprehensive understanding of biofuels markets and used the scenario outputs to inform their decision-making and move forward with some of the refinery conversion projects.

Case study

Second-generation biofuels feedstocks



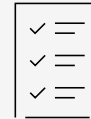
Challenge

A specialty chemical company wanted to understand the potential market for second generation biofuels and how their high-performance catalyst products could fit into the ethanol production process for that market.



Our approach

- Examined the various components that influence the market
- Looked at the regulatory environment, the demand patterns for liquid fuels and key regional markets for cellulosic ethanol (the client's main area of interest)
- Evaluated the availability and demand for multiple second-generation feedstocks in addition to cellulosic feedstocks in the key regions identified
- Combined these supply and demand views into an overall picture of the market
- Provided the client with an extensive presentation of our findings, complete with backup data and the opportunity for the client to ask our consultants questions



Results

With these findings, the client was able to evaluate the market potential for their products and make an informed decision about future business opportunities.

S&P Global

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Ready for answers?

Get in touch with our
expert consultants today.

CI.Consulting@spglobal.com

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