CERAWeek by S & P Global 2024

Executive Summary

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CERAWeek by S & P Global is attended by global energy industry leaders that meet to share, discuss, and advance solutions that guide the development of the future of energy and the environment. It is an annual meeting of CEO's, government and technology leaders representing the energy, utilities, manufacturing, government, financial and technology organizations. It is widely considered to be the most important global energy conference and one of the top global corporate gatherings.

CERAWeek roots date back to 1983, the founding of Cambridge Energy Research Associates (CERA) in Cambridge, Massachusetts by Daniel Yergin and James Rosenfield, as an energy research consultancy that evolved as a relevant analyst of the energy sector and its relationship with geopolitics, industry, and technology. The clients of CERA started meeting annually in Houston to share insights and views on energy and its future. These annual meetings expanded overtime to 5 days, the name CERAWeek was adopted and evolved to be the important and influential event it is today. In 2017, Innovation Agora was added to the program dedicated to highlighting emerging technologies and grouping technical and thought leaders, investors, government, and corporate innovators to promote discussions around the technology developments that will take energy to a better future.

CERAWeek 2024 convened 8,100 delegates from 80 countries that attended over 600 sessions by over 1,400 speakers. The 2024 theme was "Multidimensional Energy Transition: Markets, climate, technology, and geopolitics". Its discussions analyzed the energy transition dynamics from a truly multidimensional viewpoint for speed of a transition and the diversity of technologies and fuels involved. The use of the term multidimensional energy transition is a welcome reflection of an evolving global consensus that the energy transition is diverse, multipoint, and incorporates the diversity of realities, challenges, opportunities, and options that individually impact the global regions and countries and considers the diversity of social and political drivers of our world.

The conference covered Energy Markets – Policy and Geopolitics – Company Strategies – Power Markets in Transition – New Supply Chains for Net Zero – Capital Transition – Technology and Innovation – Climate and Sustainability – Just Transition – Minerals and Metals, each topic generating insightful discussions and practical lessons and takeaways.

The challenge to summarize the conference takeaways is daunting and likely will not do justice to the relevant and insightful messages that were delivered. Nonetheless, an attempt to do that follows.

Multidimensional Energy Transition was an excellent choice and the conference delivered to this topic amply. Most will agree that when the term "energy transition" first appeared it was binary and polarizing. Opposing views on fossil fuels and renewables dominated the initial years of any discussion around a transition.

Today, the energy transition is shifting from ideology to practical implementations, looking at driving molecules and electron solutions in parallel. A positive dialogue is happening, and stakeholders are having conversations around a transition that must be affordable, reliable, achievable, environmentally protective, orderly, and just among other qualifications. Most importantly, the energy transition is now generally acknowledged, and agreeing that its speed is up, however, not yet enough to meet the common goals.

The energy demand growth is outpacing renewables growth. The power demand drivers from population growth, electrification, economic development in several regions and the infrastructure that supports it are generating a demand growth that must be met with the energy resources we have. Each country has individual political and social challenges, and we cannot generalize on the solutions that are needed. Need focus on reaching targets being technology agnostic and refraining picking winners when selecting solutions. We need more energy and need energy of all kinds. CERAWeek was filled with complementary views and options to face the challenges.

The takeaways of COP 28 were very present at CERAWeek. Being the 1st major energy conference since, several notable mentions were part of the discussions. It was the first COP where the oil and gas industry was invited to participate, meaning that for the first time, all the stakeholders were at the table; there was consensus on the energy transition; 180+ countries agreed to tripling renewables by 2030; agreement on the big challenges affecting the implementation of energy transitions solutions.

Several concerns raised at the need of improving the interconnectivity of policy and politics with energy transition. Strong views that policy and politics need to be technology agnostic and refrain from picking winners. For many, regulation overreach and permitting bureaucracy is stifling projects development.

Globally, the need for regulatory stability is prime to assure long term investment projects. There was also concern that technology advances faster than the regulation design that supports it. This creates barriers to timely deployments. The energy transition is happening faster than any of the forecasts made 3, 5 or 10 years ago, our policy and politics structures need to adapt to that pace.

Not surprisingly, natural gas was highlighted again as a priority fuel in the energy transition and LNG specifically as the vehicle for global markets. The role of natural gas in the energy mix is underestimated, natural gas is more than a bridge fuel. There will be a need for gas fired power plants to assure energy security. There was general concern about the US government implementing an LNG Pause as it sends mixed signals to the market as an unreliable supplier. While the US government justifies the action as one to review status, the industry believes the government oversight and review role can be done in parallel with ongoing project development.

The energy demand and supply discussion reaffirmed the current global scenario. Oil demand is expected to stay over 100 M BOPD and expected to grow in the coming years. The US is expected to continue leading as the top global producer and potentially reach 14-15 MBOPD. The US and other emerging non-OPEC producers expected to continue balancing the oil supply equation.

Supply of renewable energy will continue to grow, however, in the short term, it will not outpace the global energy demand growth.

There were mixed discussions around hydrogen. It is generally accepted that it has good long-term potential. There are major projects and investments in the US that are leading the development of clean hydrogen and positioning it as the next important bet in the energy transition.

Artificial intelligence and the data centers that run it were part of just about every presentation. The industry is using AI for many of its processes to drive safety, reliability, productivity, and lower cost. AI is in its own digital revolution transition. It is on the map of the energy industry and is now critical.

There is massive value expectation in generative AI with focus on bending the cost curve, driving efficiency, and becoming of common use in more complex tasks. Word of caution from some recommending designing a select implementation map. Launching AI implementations in all areas at one time is not considered feasible or recommended.

An evolving word of caution and concern is the increasing energy demand coming from data centers growth explosion. Today there is at least one new data center going online every 3 days, each taking 2 years to build. These centers are driving up demand for energy. Today in the US, data centers account for 4% of the total electricity demand. Strategies for data centers' locations are based on proximity to electricity source and its cost. It was quoted that an AI google search can use 10X the energy of a regular search.

Rich discussions were held around the technology map that is part of or supports a multidimensional energy transition. Developments in power and related technologies are reshaping the energy landscape.

Semi-conductors account for a top-level strategic technology that is embedded in every part of the industry. These "chips" have global security, geopolitical and competitive implications and are the base of the technology pyramid. Today, over 90% of the most advanced chips are manufactured in Taiwan. A supply chain disruption of chips can potentially impact the global GDP by 10-30%. By 2030, it is estimated that 30% of the energy will be going into computers.

Reflections of the Week

- Fossil fuels are still needed and will be needed for years to come. The oil and gas industry is still needed and will be needed for years to come. The importance of the oil and gas industry was asserted. A dialogue is opening among all energy transition stakeholders. There is a common goal to produce more energy with less emissions.

- The energy transition is not a one size fits all for everyone. A transition must be balanced, sustainable, achievable, safe, affordable, policy led, just and equitable. Policy needs to be technology agnostic and never pick winners. There needs to be increased sensibility of the gap between ambition and reality. There is broad consensus that natural gas will be the most relevant transition fuel.

- The energy transition is accepted as being multidimensional, composed of many individual but linked transitions. A global transition will not consolidate unless the justice gap narrows. We need to abandon the binary discussion trap around energy transition. The energy industry has the dual responsibility of producing more energy and producing it cleaner. There is no sustainability without profitability.

- The energy transition is moving to a pragmatic dialogue focusing on scale and emissions reduction. Energy technology innovation needs all approaches.

- COP 28 was a success in inclusion: All stakeholders present. An Energy Transition Consensus was reached. An agreement was made to expand renewables by 3X by 2030.

- Policy leads markets. Technology leads success. Need all initiatives to work in parallel not in series.

- Problem to solve: Meet energy demand @ lower emissions.

- The world will still need molecules as a source of energy for many years to come. The world needs electrons plus molecules. We just need to make them in a better way. Politics and technology need to do a better job at co-evolving. We need free trade of ideas. The long-term results of innovation tend to be underestimated.

CERAWeek 2024 delivered beyond expectations in attendance, contents, discussions and a rich exchange of ideas and insights that while diverging at times, all pointed to a common goal of collaboration and sharing.

600 presentations, 1,400 speakers, impossible to summarize with deserved justice.

Some notable quotes:

Jennifer Granholm – USA Secretary of Energy: The world will need Traditional and New Energy. The energy transition is now generally acknowledged.

Bill Gates - Breakthrough Energy, and Terra Power: The world runs on a heavy hydrocarbon economy. “We shouldn't underestimate how incredibly difficult the energy transition challenge will be". Artificial Intelligence will become an everyday part of productivity.

Darren Woods - CEO ExxonMobil: No denying, energy transition is underway, it can mean different things to different people, will require many solutions, many technologies and is shifting from ideology to practical implementations.

Amin Nasser - CEO Saudi Aramco: “A transition strategy reset is urgently needed”. “We should abandon the fantasy of phasing out oil and gas and instead invest in them adequately reflecting realistic demand assumptions. This welcome clarity from consumers is shifting the transition’s center of gravity to a multi-source, multi-speed, multi-dimensional road to reality and to the right side of history where everyone's hopes and ambitions can actually be met.”

Stuart R Young – Minister of Energy, Trinidad & Tobago: Developing countries struggle accessing energy security facing pressures from global climate change and the developed world’s

insistence of moving towards renewables without providing the resources necessary to facilitate such a transition.

Mike Wirth - CEO Chevron: The “LNG Pause” sends mixed signals to the market as an unreliable supplier. Need balanced energy transition dialogues: Reliability, affordability, environment protection, all energy needs met.

Vicki Hollub – CEO Oxy: A single energy transition path is unrealistic. Need to build a road to decarbonization growth. The economic and wealth gaps lead to different priorities. AI implementation drives efficiency.

John Hess - CEO Hess Corporation: US and non-OPEC production is playing a balancing role in the global markets. Asia is 50% of population, energy consumption and emissions, a critical region.
Ryan Lance - CEO ConocoPhillips: With the artificial intelligence revolution, energy needs will be enormous.

Wael Swan - CEO Shell: LNG plays an increasing critical role with latent demand to mitigate a potential glut.

Patrick Pouyanné - CEO Total Energies: Today, energy demand growth outpaces renewables growth.

John Ketchum - CEO NextEra Energy: Power demand drivers: Electrification, reshoring, cloud and AI data centers.

Ricardo Markous - CEO Tecpetrol: Argentina is in a "very bad" economic situation, but on the right path to encourage energy investment and remove its fiscal imbalances if reforms proposed are approved.