



Robin Zeng: Unlocking the Sustainable Energy Era with Zero-Carbon Technology

Descrizione

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NINGDE, China, Feb. 4, 2026 /PRNewswire/ ?? Dr. Robin Zeng, Chairman and CEO of CATL, delivered a speech about the future of energy at the World Laureate Summit and the World Governments Summit in Dubai, the UAE on Feb. 3. Full text below:

Throughout human history, energy has been the driving force behind civilization??s growth. Every major leap in human development has been accompanied by an energy revolution. Today, we are experiencing another revolutionary energy shift, one comparable to humanity??s transition from hunter-gatherers to agricultural societies ?? from an era where we track down and gather fossil fuels, to one where we can harvest energy in wind and solar farms and store it in batteries.

This revolution is enabled by science and technology progress, which delivers practical solutions and drives down costs. According to the IEA and BNEF, over the past decade, the cost of LFP batteries and solar has fallen by about 80%. Sustainable energy solutions have evolved from being technically feasible to becoming an economically compelling choice.

CATL is enabling renewable energy to achieve true economic competitiveness across a range of applications. In the mining sector, solar-plus-storage systems powered by CATL have been deployed in Chile and the Democratic Republic of the Congo, supplying electricity to remote operations at about one-fourth the cost of diesel generators.

A similar transformation is underway in industrial applications. In Pakistan, the rapid growth of distributed solar, combined with CATL??s energy storage solutions, is providing reliable power to local cement plants, cutting electricity costs by half.

In California, we see what future power systems will look like at the grid scale. As storage capacity expands, the ??duck curve?? created by high renewable penetration has been significantly eased. In 2025, the grid recorded more than 1,800 hours when clean energy met or exceeded total electricity demand, showing what becomes possible when renewables and storage grow together.

These developments point to a broader reality: in many regions, clean energy is being adopted not just for climate goals, but also because technological progress has made it the most commercially viable option.

We are embracing the profound shift towards a net-zero energy era. The future energy system, to my mind, can be defined by three words: distributed, intelligent, circular.

First, distributed power systems, which include renewable generation and advanced battery storage, will mushroom across the world, especially in areas with weak grid infrastructure. This will replace a lot of fossil fuel energy, which is centralized and relies heavily on large-scale power plants and a strong grid.

However, a high proportion of renewable energy introduces new challenges to the stable operation of power systems. To address those challenges, CATL has developed an innovative high-voltage grid-forming energy storage technology, which can act as a stabilizer for zero-carbon energy systems. It can provide grid frequency regulation, reactive power compensation, damping control, and system inertia support. It also offers excellent black-start capabilities, which are crucial in the case of large-scale blackouts, like the one hit Spain last year.

This technology has been successfully validated in engineering, and in China we are applying this technology to build an off-grid industrial park, which is powered entirely by wind, solar, and storage to supply a 40GWh battery plant. It showcases how advanced energy technology can create a net-zero power system.

Beyond being distributed, future energy systems will be more intelligent. They will be able to handle vast amounts of data and adjust to fluctuations in renewable power generation and consumption. Advanced AI-driven scheduling and optimization will be required to balance energy supply and demand. For instance, we use AI to enhance energy system management for SenseTime's AI Data Center in Shanghai, helping manage the fluctuating energy demand of computing tasks.

Thirdly, circular economy is crucial for achieving zero-carbon energy. Unlike fossil fuels, which are burned upon use, materials for zero-carbon energy systems can be recycled. CATL has been at the forefront of this effort, and we have achieved the highest recovery rates in the industry—99.6% for nickel and cobalt, and 96.5% for lithium. To build a stable, sustainable supply of critical raw materials, we are also working closely with NGOs and industry peers to promote a circular economy in the sector.

Driven by continued progress in zero-carbon technologies, a sustainable energy era is no longer a distant vision—it is approaching rapidly. In my estimate, 2030 will mark the true beginning of the sustainable energy era.

How can we get there? My answer is: science shows us what is possible, but engineering and manufacturing determine how fast we get there.

Basic science remains the ultimate source of transformation. Breakthroughs in material science, artificial intelligence, and new energy systems will continue to shape what the future can look like. To be honest, with today's technologies, we may have solved less than 30% of what a fully sustainable energy system requires. Many disruptive technologies have yet to emerge, and much foundational research still lies ahead.

For technology to truly change the world, it must move beyond labs and be deployed at scale. Today, we have made scientific and technological breakthroughs in frontier areas such as condensed batteries, solid-state batteries, and perovskite solar batteries. Yet there is still much more to do to scale these innovations from the lab to the market. That is why we are investing heavily in R&D â?? more than all other players in the industry combined.

While fighting global warming appears to be a climate issue, it is in essence an energy issue, and fundamentally, a development issue. We believe international cooperation is the most efficient way to tackle it, and we are willing to share battery technologies and experiences with the world. We have evolved from exporting batteries in the early days, to â??local production, for local marketsâ?• now. We are also licensing technologies to our partners to help them build their own battery plants.

To accelerate the transition to a sustainable energy era, we need to scale up advanced energy technologies in a more efficient and affordable manner globally. However, in some markets, in our experience, building and equipment regulations are the cause of higher cost of production. I would like to propose a solution: setting up special economic zones that adopt similar regulations of building and equipment which are practiced in China. This will quickly scale up productivity, as it has been proven successful in China.

Ladies and gentlemen, a recent study by Columbia University projects a 1.7 degrees C temperature rise above the pre-industrial level in 2027. To tackle global warming, we need to take immediate action to build a sustainable energy system. This requires technology breakthroughs, courage and wisdom.

As a pioneer of the energy transition, CATL is willing to work more closely with the scientific community, governments, businesses, and anyone who is committed to the mission. Letâ??s work together towards a net-zero energy future, and leave a healthy, green Earth for future generations to come.

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