

The World's Leading Electric-Car Visionary Isn't Elon Musk

Wan Gang pushed China to leapfrog the West in electric vehicles.

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From Hyperdrive

At this year's Beijing Auto Show, a retired Chinese bureaucrat bent down to run his hands over the hood of a sleek sports coupe billed as the world's fastest battery-powered car, and he smiled like a proud father.

In a way, that's exactly what he was. Two decades earlier, Wan Gang persuaded China's State Council to throw its vast power behind the risky, unproven technology of electric cars. He advocated using government money, including subsidies, to help create a world champion industry that would surpass Western automakers. That coupe he was admiring at the April auto show? It was built by homegrown NIO Inc.

Elon Musk made a name for himself promoting new-energy vehicles, but when the history of the electric car is finally written, Wan may loom larger. Chinese drivers buy one of every two EVs sold, and the global auto industry is pivoting to adjust. It's a revolution fomented by Wan, a former minister of science and technology whose achievements are even more extraordinary when you consider that he never joined the Chinese Communist Party.

"He's the father of China's electric-vehicle industry," said Levi Tillemann, a former U.S. Department of Energy adviser and author of "The Great Race: The Global Quest for the Car of the Future." "Without Wan Gang, it's unlikely China would have pushed to surpass the West. That was his big idea."

Wan, 66, who stepped down in March and now holds an academic post at a Beijing-based think tank, currently isn't giving interviews, his office said.

After decades of hype and false starts, electric vehicles are on course to represent a significant segment of the auto industry. This year, China's production of NEVs is expected to reach 1 million vehicles, a 26 percent increase from last year. The U.K., France and India are proposing bans on vehicles powered by internal-combustion engines, according to Bloomberg New Energy Finance.

A blue electric taxi made by BYD is stuck at an intersection in Taiyuan, Shanxi province. Taiyuan became the first city to replace its entire fleet of taxis with electric vehicles.

Long before becoming the nation's top futurist, Wan suffered through the Cultural Revolution of the 1960s, China's great leap backward for science and technology. Sent from Shanghai to a remote village near North Korea at age 16 to learn values from peasants, he spent his days repairing the town's smoke-belching tractor and building its electricity grid from scratch, according to the state-run People's Daily and author Lisa Margonelli, who interviewed Wan.

One of the lucky few of his generation to attend college, Wan was admitted to a Ph.D. program in mechanical engineering at Clausthal University of Technology in Germany. When he graduated in 1991, job offers came from all the big German carmakers, but he picked Audi because it was the smallest and provided the best chances for promotion.

As an executive in Audi's planning department, Wan played the role of ambassador, showing its state-of-the-art factory in Ingolstadt to Chinese delegates trying to resurrect their decrepit auto industry. One guest was then-science minister Zhu Lilan, who took a liking to the engineer.

Months after their first meeting, in 2000, Wan was back home selling Zhu and the rest of the State Council on the idea of leapfrogging. China was choking in smog, and its automakers, Wan reasoned, could never hope to catch up with Japanese, American or German manufacturers when it came to traditional vehicles.

A bet on new technologies could put China on more-equal footing or even allow it to take the lead, he theorized. It also could help the country break its dependence on foreign oil.

"Wan Gang was saying, 'I want to create a system where we can be energy secure and there's a more level playing field for our companies,'" said Bill Russo, a former Chrysler executive who now heads auto consultant Gao Feng Advisory in Beijing. "He knew you couldn't win playing the old game."

And so did some high-powered colleagues. Former Vice Premier Li Lanqing, who started in 1952 at the automaker now known as China FAW Group Corp., developed the plan to create the NEV research program. And Ma Kai spearheaded NEV stimulus policies while running the National Development and Reform Commission that helps oversee the economy.

By 2007, Wan was minister of science and technology, overseeing billions of yuan with sway to help funnel research-and-development money toward favored industries. In that job, he repeatedly challenged China's engineers: build a fleet of electric buses for the 2008 Beijing Olympics; put 1,000 battery-powered vehicles on the streets of every major city. The spring of 2010 brought subsidies of as much as \$10,000 for every EV the carmakers could sell.

“There will be a strategic window for developing electric vehicles over the next 10 to 20 years,” Wan told state media that March. “We have to take action now.” China’s R&D rush was on.

A few months later, the mood was tense at Argonne National Laboratory, the U.S. federal research center near Chicago, where scientists invented the lithium-ion battery technology used in GM’s plug-in hybrid, the Volt.

From right: Wan Gang, Linde AG board member Bernd Eulitz, and German Minister of Transport Alexander Dobrindt.

Wan was visiting the lab to learn about chemical recipes for batteries. U.S. counterintelligence briefed scientist Jeff Chamberlain and his team about the dangers of letting secrets slip. The Americans were wary, until they got to know Wan.

“It all dissolved the moment you talked to him,” Chamberlain said. “We were just scientists comparing notes. I never felt once, not even remotely, that he was fishing. That doesn’t mean he wasn’t doing it, but we never felt it.”

The world’s automakers invited Wan inside, too. They had no choice.

“He was our most important customer in China,” said Makoto Yoshida, a government affairs officer at Nissan Motor Co., who last summer gave Wan a tour of a facility near Yokohama, where the minister drove hybrid cars. “If China says ‘we can’t accept your technology,’ it’s a big problem for us, which is why Wan Gang was the key person.”

Today, there are more than 100 Chinese-made electric-car models on the market, built by giants like Warren Buffett-backed BYD Co. and startups such as NIO, which raised about \$1 billion in an initial public offering this month.

Wang Chuanfu, the billionaire founder of BYD, China’s biggest maker of NEVs, recalled meeting Wan in 2014. “I was impressed by Wan’s obsession with clean-energy technology,” he said.

NEVs account for about 1 of every 20 passenger cars purchased in China, numbers likely to rise because of state incentives -- Wan’s real legacy.

The government is building a vast network of charging stations and strong-arming consumers into buying EVs by making them the only sure way to get a license plate in big cities. (Otherwise, drivers have to enter lotteries.) Starting next year, every automaker wanting to operate in China has to meet production targets for battery-powered vehicles or buy credits from rivals.

For Chamberlain, these are beneficial changes. Since 2016, the American scientist has run Volta Energy Technologies, a battery startup in Naperville, Illinois. He said the revolution

wrought by Wan means it no longer matters if the U.S. rolls back emissions or fuel-efficiency standards, as President Donald Trump talks about.

“Whether it’s Ford or General Motors or VW, or Hyundai or Toyota, if they want to participate in the Chinese market they must have electric vehicles,” Chamberlain said. “I’m happy for Wan Gang because that was his vision from many years ago.”