

China's Power Challenge

When morning comes to China, more than a billion people turn on the light. They cook breakfast, take transportation to work, and then continue to use energy throughout the day. Many people work in factories, and the factories use a lot of energy, too. Providing enough power for the country is a big responsibility for the government. At the same time, Chinese leaders worry about pollution, environmental damage and climate change. Because the country is so big, China's energy decisions are important, and the world is watching.

Right now, China is similar to the rest of the world. It gets most of its energy from coal and gas. These traditional energy sources helped many countries become successful in the past, but they caused problems. Now oceans are getting warmer, and ice is melting. Many cities near the ocean are flooding. Other parts of the world are becoming dry, so it is hard to grow food.

As a result, much of the world must find cleaner ways to power the 21st century. In 2015, many countries signed an agreement to reduce pollution. The United States and India were important partners because they cause a lot of pollution, but in 2017, the U.S. became the first country to withdraw from the Paris climate agreement. This was a disappointment to much of the world, particularly island nations that are slowly sinking into the ocean as sea levels rise.

Since the climate agreement, India has made progress. The country has cancelled plans for coal plants and is increasing its use of solar power. This is also a practical choice because solar power is now cheaper and cleaner in many places. Also, many cities and states in the U.S. have promised to honor the Paris Climate agreement on their own.

China was a big question, however. The world was watching China because it was so big, and it was transforming so rapidly. China needed energy because it had more people and factories than any other country, but what kind of energy would this big country produce? Would it join the climate agreement and look for clean sources of energy or would it continue to use coal and gas?

In the early 2000s China's economy was growing, and the country increased coal use by ten percent a year. By 2012, China was responsible for half of the world's coal pollution. The government knew energy from coal was causing a health and environmental problem, but it was easy and cheap. When the Paris Climate talks began, Chinese leaders had to make a decision. If China signed the climate agreement, it might hurt economic growth. On the other hand, maybe China could be a leader in developing new sources of energy.

After much discussion, China accepted the challenge. The country joined one hundred and seventy-five countries in promising to reduce pollution. Today it is possible to see answers to the question, "Can one of the world's biggest polluters cut dirty energy *and* enjoy economic growth?"

In China, the answer may be yes. One solution is energy efficiency, and China is working on new designs for green buildings. Green buildings use less energy than other buildings. In China, Shanghai Tower is one of the greenest skyscrapers in the world. It has two layers of glass. The glass helps keep the inside cool in the summer and warm in the winter. The building also gets electricity from wind, and it even collects and reuses rainwater. The project is successful, and now other hotels and office buildings are using the same design.

Transportation solutions are also important. One new idea is a big bus on tracks. The bus carries passengers above the cars. It looks funny because cars can drive under it. It is also big. It can carry up to 1400 people. For big crowded cities, the bus offers a way to use the air above the streets for transportation. This project has slowed down in recent years, but it suggests that China is looking for practical solutions to the challenge of moving millions of people through an urban environment.

China is also trying to use more energy from water, wind and sun. Dams on rivers provide six percent of the country's electricity, and wind farms produce another six percent, but the most growth is in electricity from the sun. With the support of the government, Chinese companies are producing more solar panels than any other country. The solar panels create clean energy and help the economy at the same time.

One of these companies is Himin Solar Corporation. The company has installed millions of square feet of solar panels. They are on the roofs of buildings in many cities, and they have created solar farms on the ground. They want people to know about solar power, so they have created a solar-powered hotel and convention center. The Sun-Moon Mansion has a half circle of solar panels around it. People come to see it and learn about sustainable energy technology.

Another Chinese company is building the world's largest solar farm. The Ningxia solar farm will have 6 million solar panels, and it will cost more than two billion dollars. When it is complete, it can produce energy for an entire city of about 200,000 people. That energy will be clean and safe, and it can even help farmers. The panels provide shade, which helps save water for plants.

China's solar initiatives are not perfect, however. One problem with solar is time. People need power at night, and the sun does not shine at night. Scientists are trying to find ways to store energy, but no one has a good solution yet. Another challenge is transporting electricity. The solar farm needs to deliver the electricity to cities and factories. Right now, the Ningxia farm produces energy, but people do not use all of it. In fact, while solar is growing, it is still only provides one percent of the country's electricity.

Despite challenges, China's energy use is moving towards the goals set by the climate agreement. In 2015, China spent more money on clean energy than any other country, and its use of coal went down for the first time. Now almost 15 percent of its energy comes from wind, water and sun. With China and many other countries and companies searching for new ways to provide electricity, a great transformation in the energy business may yet occur.