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The potential for wind projects in developing companies is growing in leaps and bounds, which will create logistics challenges. Here's what you should know, and do.

WIND ENERGY POTENTIAL in a number of developing and emerging countries could be substantial. A recent U.N. wind study of countries from China to Nicaragua show approximately 13 percent of the land area has potential for development, compared to just 1 percent a number of years ago when wind potential was based on unreliable data. Among the nations surveyed Nicaragua, Mongolia, and Vietnam have the greatest potential, with about 40 percent of land area suitable for wind farms.

In Nicaragua, U.N. data estimates its potential at 40,000 megawatts, equivalent to 40 nuclear power plants. Vietnam's economy has grown rapidly and faces the need for a greater and more reliable power source. Opportunities for wind power in Saharan Africa and in the Middle East—such as Syria and Libya, as well as South Africa—are also great due to favorable investment climate, ideal natural conditions, and increasing energy demand.

Extreme temperatures produce extreme winds, giving many African countries some of the highest wind velocities in the world. Morocco and Egypt have taken steps to commercially harness wind power. Ethiopia has commissioned wind energy projects, and Tanzania and South Africa are planning projects. And in Kenya 365 large turbines will be installed near Lake Turkana, which will create the biggest wind farm on that continent.

However, with opportunities come challenges. Compared with wind energy projects in industrialized countries, projects in developing and emerging countries can incur higher costs for transportation, installation, and maintenance, as well as additional factors associated with the demanding climate conditions.

These countries have little or no infrastructure, and limited technology in place. While China may not be considered by most as a developing country, there are still significant transportation hurdles for wind farm developers in many parts of that country. The project in Kenya will require transporting turbines to a very remote location, and roads and bridges must be repaired before trucks can even be brought in. The challenges are even greater when components are coming from many locations and must arrive within a specific timeframe.

Transportation obstacles in developing countries can be overcome with the right project management, logistics resources, and freight-forwarding partners who can help ensure successful delivery of the cargo and prevent potential damages during shipping and handling. In other words, resources who can take planning and execution to an even higher level, providing solutions to issues such as authorization of road permits, special equipment importation, and temporary customs clearance. Many ports in developing countries do not have the necessary special equipment, and little to no experience in handling wind components, so look for a logistics provider that offers solutions that go beyond the norm.

Logistics providers must work with a knowledgeable, experienced marine surveyor at the entry port or discharge port, which is particularly important if the port has never handled wind components. Marine surveyors are responsible for making sure the cargo is properly handled—they inspect, survey, and document the physical movement at the port. The surveyor should have knowledge of how wind components should be lifted and handled. An inexperienced surveyor, or no surveyor, could prove costly.

The management of risk is also very important, especially for projects in developing countries. One of the logistics priorities should be the avoidance of damages and loss. But even with the best procedures damage can occur, and when that happens, delays will result. Insurance will help to mitigate the financial impact of damages, but it won't help the schedule impact. So a risk management program that relies upon having insurance and avoiding damage is very important.

In some developing countries, transporting components can—or must—include armed guards. For example, transporting from the port to the jobsite for the planned wind farm in Kenya is a long trip. Trucks may have to stop, and suitable locations must be selected to ensure cargo is secure. Personal safety issues cannot be ignored, either. Your logistics provider can help determine what security measures are appropriate. They should thoroughly review and make an assessment of the risks for each step in the project transportation timeline to help take the worry out of operating in developing countries.

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