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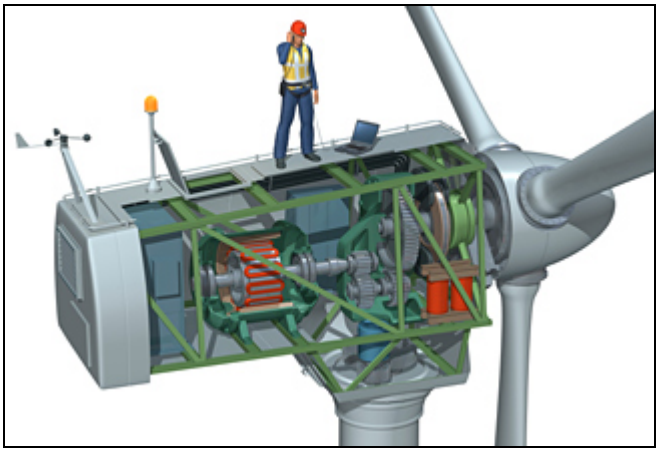
RENEWABLES: Tilting with wind turbines -- a legal war slows industry growth *(08/04/2010)*

Peter Behr, E&E reporter

It's being called "the turbine wars."

General Electric Co. and Mitsubishi Heavy Industries Ltd., the Japanese industrial behemoth, are locked in a 2-year-old, escalating legal battle over patents surrounding GE's wind generators, which have been the leaders in the fast-growing American wind power market.

GE, the dominant U.S. supplier, tried to block Mitsubishi from importing wind turbines, claiming that the Japanese company had stolen its technology. It won a favorable preliminary ruling last year from a U.S. International Trade Commission administrative judge, after a two-week trial. But the full commission didn't agree, concluding in January that Mitsubishi hadn't infringed GE's patents and that GE's turbines no longer employ the technology covered in the patents.



Turbine manufacturers have added devices to deal with changes in the velocity of wind -- and lawyers to cope with the increasing velocity of litigation.

Attorneys for GE have filed two patent infringement suits against Mitsubishi in separate U.S. District Courts in Texas, and are appealing the ITC's January decision. Mitsubishi has fired back with a patent infringement suit against GE in Florida and an antitrust suit filed in Arkansas, claiming that GE's patents are anti-competitive shams that harm competition.

Platoons of lawyers are in the fray. "There is a feeding frenzy for litigation attorneys. You have got a couple of whales on the hook," said Mark Haller of Haller Wind Consulting LLC in River Falls, Wis.

In their filings, Mitsubishi's attorneys at Steptoe & Johnson LLP describe GE as a kind of town bully, using its patent position to pressure rivals to license its turbine technology or be barred from the U.S. market. Mitsubishi's U.S. turbine sales, which totaled nearly 1,000 megawatts in its 2008 fiscal year, dropped to zero last year because of the suits,

the company said. GE has "sufficient market power for monopolization" of the U.S. market for variable-speed wind turbines, the Japanese firm contends.

Analyses of the fast-changing global wind power competition by the ITC and the American Wind Energy Association suggest the possibility that GE has more to lose, should its patents not hold up.

While GE was the second-largest wind turbine supplier worldwide, its position is concentrated in the U.S. market, where it achieved 80 percent of its sales in the past two years, according to a July **report** by Andrew David of the ITC.

GE slipping on home turf

GE's edge has recently slipped on its home turf. GE provided 40 percent of new U.S. wind power capacity in 2009, according to AWEA's annual report. Adding U.S. wind capacity supplied by GE licensees Gamesa and Acciona Wind of Spain yields a 52 percent share. (Whether Germany's Siemens or other suppliers are also GE licensees could not be determined.) Vestas was the second leading turbine firm in the United States last year, with 15 percent of the market. Mitsubishi had an 8 percent share before orders dried up.

But GE's share of projects under construction at the end of 2009 fell to 32 percent, AWEA said. Siemens' share was 20 percent. India's Suzlon firm and other manufacturers had 17 percent of the U.S. market.

GE says its new, larger turbines entering the market will restore its lead. Currently, it trails major rivals in delivering turbines above 2 megawatts in this country. In December, it received a $1.4 billion contract to supply turbines for the 845-megawatt Shepherds Flat Wind Farm in north-central Oregon, the first orders for its 2.5-megawatt units in the United States. They will be delivered in 2011 and 2012, GE says. It has also announced a new contract to supply G36 2.5-megawatt wind turbines for a Thailand project.

GE's position in foreign markets currently is far weaker than at home. More than 80 percent of its total turbine deliveries last year were within the United States. Denmark, Germany, India, Japan, and Spain accounted for a combined 91 percent of global exports of wind-power units in 2008, with the United States trailing.

GE accounted for 1 percent of wind turbine sales in Germany in 2008 and 3 percent of China's burgeoning wind power market that year, which surpassed the United States in annual wind power installations last year.

China's primary wind power projects appear effectively closed to GE and other foreign suppliers, as Beijing pursues a campaign for leadership in new energy technologies, the ITC reports. China's government is following a decades-long plan to become a world power in wind turbine production, and until recently required that turbines at major wind farms supported by its National Development and Reform Commission have a 70 percent Chinese content, according to a study by attorney Thomas Howell and

colleagues at the Dewey & LeBoeuf law firm for the U.S. National Foreign Trade Council.

Beijing pursues 'made in China' policy

"In the spring of 2009, all multinational manufacturers of turbines bidding on NDRC wind power concession projects were disqualified on technical grounds within three days of bidding," the report says. GE and other foreign suppliers have won contracts for smaller projects in China from local governments and private developers, but their market shares there continue to fall.

So while key foreign markets are stoutly defended or inaccessible, GE is forced to protect its turf against a growing tide of foreign producers eager to import or set up manufacturing facilities in the United States, the latest ITC report makes clear.

Patents are a key to GE's defense. Rick Stanley, vice president for engineering at GE Energy, told an investor conference last September that GE Energy would file 800 patents in 2009, double the total in 2005. "And we now hold many, many more wind patents than our competitors do. ... We are getting even more aggressive at defending our patents now," he said, citing the ITC filing.

Spain's Gamesa took GE's side in the ITC case, noting that it has licensed the GE turbine technology. "Gamesa paid the corresponding royalty fees for the right to use these GE patents, and it is Gamesa's understanding that many other wind turbine suppliers have also licensed the same patented technology." Failing to keep out Mitsubishi's turbines would "reward their infringement," it said.

Iberdrola, the largest Spanish wind power firm, went to Mitsubishi's corner. It had ordered 84 turbines with more than 200 megawatts capacity from the Japanese firm for its Penescal II wind farm near San Antonio, Texas. It would take years for Iberdrola and other Mitsubishi customers to get replacements if the Japanese firm's turbines were kept out, the Spanish company said.

Mitsubishi says that GE's patent wall is aimed at intimidating prospective customers, citing the case of Edison Mission Energy, a California wind developer that had ordered 166 wind turbines from the Japanese firm three years ago for $510 million.

When GE filed the patent case at the ITC, in 2008, Edison claimed the Japanese company had violated contract assurances that its products were free of patent issues. The ITC case blocked Edison's search for investor funding for its project, Edison said, forcing it to go elsewhere for its turbines. It seeks $1 billion in damages from the Japanese firm, in a California court suit.

Some in the wind energy say the patent dispute has not affected the pace of wind development in the United States.

"I've not heard a word about it," said Paul Sadler, executive director of the Wind Coalition in Austin, Texas, whose 42 members include manufacturers, component

suppliers and developers in the nation's largest wind market. "Not a single comment that it impacts the market."

"It's mainly a two-party fight, but it could affect how much other industry players respect GE patents," said Lawrence Kass, an attorney with Milbank Tweed Hadley & McCloy.

Ways to get around a 'patent wall'

Peter Duprey, CEO at Acciona Energy North America and a former GE official, said "the industry in some respects is maturing around many of the patent issues. There are a number of cross-licensing agreements between Acciona and GE, and Gamesa and GE. That shows a maturing. Frankly, I think Mitsubishi is probably an exception."

One of the patents in question, referred to as No. "'039," covers the electronics within the turbine nacelle, or housing behind the rotor blades, that help the wind generator to maintain power output when wind speeds vary. Variable-speed turbines have largely replaced fixed-speed models because of their better performance. GE patent "'221" deals with means of keeping turbines connected to the grid when voltages drop on the system. Another patent, "'985," covers "ride through" technology that keeps turbine generators operating when voltage sags by providing reliable backup power.

A wind farm near Tehachapi, Calif.

Vestas, the major Danish wind turbine manufacturer, which has a Colorado manufacturing plant, has been able to compete without running afoul of the GE patents. "They have a different electrical design," Duprey said. "Both companies understood what Vestas did and thought Vestas properly engineered around the patent."

"Some of the patent questions have probably limited the development and rollout of advances in [wind power] technologies," countered Haller, the Minnesota consultant, who has battled GE in an earlier dispute over one of the same patents now at issue. The fight "has caused a significant problem and concern in the European industry," Haller said.

Haller said that one prominent European firm in the U.S. market -- which has not licensed GE's technology -- elected to "dumb down" its turbine electronics. "It's a poor man's [product], to stay off the radar screen of American-style litigation." For the same reason, a lot of foreign competitors haven't shown up in the United States, he said. A U.S. grid official said that Siemens wind turbines sold to Canada's Ontario province have more advanced electronics than GE and other companies are supplying in the United States.

Mitsubishi said GE initially pushed it to sign a licensing agreement at an "exorbitant" $500 million price, and sought to cap the number of turbines Mitsubishi could sell in the United States. When the Japanese firm said no, GE launched its patent offensive. "GE has used the lawsuits as a marketing tool," intimidating prospective Mitsubishi customers into licensing GE technology to avoid patent infringement claims, its lawyers said.

In May this year, Mitsubishi signed a development agreement with the state of Arkansas to build a wind turbine manufacturing plant in Fort Smith, Ark., an expected $100 million investment. If GE's suits continue, there may be no customers for that factory, the Japanese company's lawyers claimed.

Mitsubishi claims fraud

After the ITC ruled against GE in January, the company filed a second patent infringement suit against Mitsubishi based on two additional patents. "GE -- and many others -- have invested tremendous sums of money in R&D related to this industry," said a GE official involved in the dispute. "When we put in $100 million over time, the only way that you can protect that investment is through [defending] intellectual property rights," he said.

The Japanese company's lawyers at Steptoe counterattacked in the Arkansas antitrust case, saying their investigation shows that a central claim in the '039 patent was built on U.S.-government-funded research by GE in the 1980s -- "prior art" that GE did not disclose to the ITC during that dispute. (GE ultimately purchased the patent in 2002 from the Enron Corp. bankruptcy estate). A key claim in the '221 patent was based on German technology, Mitsubishi claims. Thus the GE patents "were either procured or enforced through fraud," argue lawyers for the Japanese firm.

That claim, denied by GE, is one Mitsubishi must prove to a jury. "To the extent the antitrust complaint alleges that GE procured its patents through fraud or pursued infringement actions in bad faith, Mitsubishi will be required to meet a higher burden of proof by clear and convincing evidence," said Kass. Some antitrust specialists say the Japanese firm won't find that easy to do.

One of the patent infringement cases has been stayed while GE appeals the ITC ruling. A second one, in Dallas, is not scheduled for trial until the end of November in 2011. Timetables in other courts aren't settled.

GE may benefit from a trend in U.S. courts to give weight to patent holdings. From the New Deal period through the mid-1970s, "antitrust concerns commonly overrode patent rights in court decisions," reflecting government's suspicion of the power of "big business," said Howell and his Dewey & LeBoeuf colleagues in another paper.

But the economic stagnation of the 1970s led to a reappraisal of U.S. competitiveness and ultimately an expanding policy consensus that strong patent protection would spur innovation, they said. Decisions by the Supreme Court and lower courts in favor of patent holders helped attract venture capital investments in biotech, semiconductor designs, software and nanotechnologies, giving these U.S. industries a critical lift up.

Whether that is repeated in the wind power sector remains to be seen.

The U.S. wind power industry's prospects were soaring before the recession, but not now, industry leaders say. The economic slump has chilled utilities' appetite for wind power. Prime wind energy locations require new transmission lines, but a national consensus on transmission policies appears far away. Proposals to set a price on carbon emissions, giving a long-term boost to wind projects, are dead in the Senate, congressional aides say, and it is not clear whether a national renewable energy standard will pass.