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PHONE: 703-750-2664 FAX: 703-750-0064 URL: WWW.MANUFACTURINGNEWS.COM

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GENERAL ELECTRIC CEO JEFFREY IMMELT:

The U.S. No Longer Drives Global Economic Growth

A downturn in the U.S. economy shouldn't hurt General Electric because most of the company's growth is in foreign markets, according to GE chairman and CEO Jeffrey Immelt. The United States is no longer the world's primary economic engine.

"When I look at our businesses outside the United States [they are] very robust and very strong," Immelt said in a Nov. 8 interview with public television talk-show host Charlie Rose. "I really am not worried" about the credit crunch, U.S. housing crisis and high energy costs.

"For our company, I view this as more opportunity than downside. I think you've got to be cautious about the U.S. consumer, but over the last five years we have really positioned ourselves as a global company. What I'm about to say might be good news or it might be bad news: the world has never been more independent

from the U.S. economy. If the U.S. economy goes into a recession, the rest of the world is going to feel it, but in my business life, I've never seen as much sense that there are other economies around the world that can absorb the growth."

The U.S. economy is still important, but not like it was five, 10 or 20 years ago, said Immelt. Evidence of this can be found in the \$15 trillion that exists in reserves in China, Russia and countries in the

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Quebec Tries To Save Manufacturing Base

The government of Quebec, Canada, has adopted an expansive and expensive new program aimed at saving its manufacturing sector. "Already in full flux, the manufacturing sector is feeling the effects of rapidly changing economic conditions including the fast-rising dollar," says Quebec's Economic Development, Innovation and Export Trade agency in its Nov. 23 "Action Plan to Support the Quebec Manufacturing Sector."

The "mobilization plan" will immediately suspend payment by manufacturing firms of income tax installments and capital taxes for one year, at a cost of \$500 million (Can.) in order to improve manufacturers' cash flow and spur investment in new equipment. It will also increase the capital tax credit for manufacturers from 10 percent to 15 percent.

"The government is making \$440 million in direct funding available to the Quebec manufacturing sector over the next four years, [an] investment [that] is piggybacked on new tax expenditures totaling \$178 million," says the plan. "The government will also contribute \$25 million to a venture capital fund for clean technologies."

Quebec's manufacturing sector is worthy of the financing. Manufacturers employ one in six people in the province; they account for 19 percent of economic activity, 91 percent of the goods exported, and 55 percent of research and development spending. "We cannot simply wait out current difficulties," says the plan. "We must face them head on in order to come out stronger."

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NIST: New Investment In Biopharmaceutical Infrastructure Will Pay Big Dividends For U.S.

A substantial new investment in the biopharmaceutical industry's infrastructure could have a profound impact on the ability of the industry to develop a new generation of drugs and remain a competitive force in the global economy, according to a report from the National Institute of Standards and Technology.

Investments in reference materials and data that enable innovation, measurement and test methods, as well as improving interfaces among equipment, allowing for the accurate transmission of data, and developing techniques that control process quality and accuracy of instrumentation could lead to "significant" improvements in the drug development process, says the NIST report.

"For the pharmaceutical industry as a whole, only one in roughly 10,000 compounds screened during the drug discovery stage succeeds in passing through the clinical trial stage and attaining FDA [approval] as an approved drug," says the study entitled "An Economic Analysis of the Technology Infrastructure Needs of the U.S. Biopharmaceutical Industry."

Only 8 percent of all drugs that reach clinical trials ever reach market and recoup their R&D expenditure. "Furthermore, the failure rate in the last and most expensive Phase III is nearly 50 percent, which means that many drug candidates pass earlier development and clinical testing before being found unacceptable." It takes eight to 15 years for most biopharmaceuticals to go from initial discovery to approval.

Improving the industry's infrastructure would have a "substantial economic impact and can significantly differentiate [the] domestic industry's performance from the growing number of global competitors," says the study. "However, its varied and ubiquitous nature along with its public-good

character inhibit investment by industry and adequate policy support by government."

The U.S. biopharmaceutical industry spends \$21 billion a year on R&D and \$1.2 billion to maintain a technology infrastructure that supports research, manufacturing and postmarket surveillance. The industry is in a period of transition away from developing "small-molecule" drugs toward larger, more complex molecular compounds that target biochemical mechanisms instead of symptoms. "Such a science-based approach means that these 'large molecule drugs' are designed based on how human biological systems function," says the study. But this new system of drug discovery and development is extremely time consuming and new tools and infrastructure technologies "must advance with the generic technology," says the NIST study.

Investments in analytical instruments, advanced software systems, algorithms and the ability to communicate among data sets, technology platforms, research and

manufacturing partners would have a big impact on the industry and on the overall health care system. Such investments could "increase the probability of FDA approval for the average [drug] by one-third — from 30 percent to 40 percent," says the NIST study. Expenditures for a new FDA-approved drug could be reduced by 25 percent to 48 percent, from between \$289 million and \$421 million, on a baseline cost of the average \$560 million it takes to develop a drug through approval if a new round of infrastructure investment was made. The time to move from discovery through clinical trials could drop from 11 years to eight years; and annual manufacturing costs for the industry could be reduced by \$1.5 billion or 23 percent.

"A 50 percent improvement is significant and would require both substantial and broad-based advances in a range of technology infrastructures, particularly for gene expression analysis and biomarkers," says the study, located at <http://www.nist.gov/director/planning/planning.htm>.

ITAA, GEIA In Merger Talks

The Information Technology Association of America (ITAA) and the Government Electronics and Information Technology Association (GEIA) have entered into merger talks. The two Washington, D.C., based-organizations could join forces in 2008.

A merger would "carry industry's message to Washington with a louder and clearer voice," says ITAA chairman Dave Sanders. "For too long our nation's leaders have had to sort through a complex and sometimes inconsistent series of statements and positions to understand industry's needs — this is the first step toward solving that problem." A combined organization would have 380 member companies.

"GEIA's market forecasting reports, government relations and standards programs are extremely complementary to ITAA's offerings, particularly our leading public policy advocacy," says incoming ITAA chairman Henry Steininger. The merger of these two association leaders would clearly yield a whole that is greater than the sum of its parts."

Thirty-one government contractors are members of both ITAA and GEIA "representing approximately 30 percent of the organizations' combined revenues," says ITAA. GEIA represents government contractors of electronics and information technologies. ITAA has 300 members.

U.S.-China Commission Tells DOD To Assess What It Is Buying From China

The 12-member, bipartisan United States-China Economic and Security Review Commission (USCC) unanimously approved its latest report on the troubled and complex relationship between the world's two great powers.

The congressionally chartered group continued its string of forthright analyses of China. The Chinese weren't too impressed. "Turning a blind eye to China's political, economic and social progress and achievements in other fields, the Commission clings to its biased position, grossly interferes in China's internal affairs and vilifies China," said Chinese Foreign Ministry spokesman Liu Jianchao. "Their attempt to mislead the public opinion and set obstacles for China-U.S. extensive cooperation will lead nowhere. We have made solemn representations to the U.S. and expressed our resolute opposition."

But while the report criticizes China on a number of fronts, it also takes aim at the U.S. Department of Defense for not monitoring the shift of production of important military technologies from domestic to foreign locations and what it means for national security. "At the present time, U.S. officials are neither carefully tracking the persistent attrition of the U.S. defense industrial base as more and more manufacturing is outsourced offshore, nor identifying and justifying on national security grounds an irreducible minimum defense industrial base that the United States should retain regardless of the cost or effort required to do so," says the commission. DOD does not know the extent to which defense parts and components are being sourced from China.

The commission says that China is making some progress toward economic reforms, "but only with great hesitancy and, even then, only with the prodding of other nations and the World Trade Organization," the report opens. "China is unwilling to embrace market-oriented mechanisms such as a freely traded currency, because it maintains a

preference for authoritarian controls over its economy. It has not yet, for example, allowed its citizens to freely invest their savings abroad or even in Hong Kong's stock market."

There are hundreds of such observations in the commission's annual report to Congress.

The commission expressed alarm over China's reversal of course toward a more market-based economy. China has identified a dozen industries that will remain under government control and ownership, including information technology, telecommunications, shipping, civil aviation and steel, among others. "This is problematic for several reasons," says Carolyn Bartholomew, chairman of the commission. "For one, these industries are more likely to receive the kinds of subsidies, such as export-dependent tax cuts and low-interest rate loans, that will continue to make them unfair global competitors. For another, by walling off a large sector of the economy from public ownership, China isn't fulfilling the expectations of the members of the World Trade Organization who voted to admit China in 2001. China's actions certainly violate the spirit and principles of the WTO."

China refuses to crack down on

patent and trademark infringements. It manipulates its currency. It has retained its mercantilist policies and has amassed the world's largest foreign currency reserves of \$1.43 trillion, up from \$1.2 trillion in 2006. Its trade surplus with the United States continues to grow unabated, reaching \$164 billion through August 2007, up from \$143 billion for the same period in 2006. It exports five times more to the United States than it imports from the U.S.

"China's mercantilist policies are taking a huge toll on small- and medium-sized manufacturing facilities and their workers in the United States," the commission found. U.S.-based multinational companies have moved their production to China, but the smaller firms are not able to do so, and thus "face the full brunt of China's unfair trade practices," says the annual report. "This is significant because small and medium enterprises represent 60 percent of the manufacturing jobs in the United States."

The commission finds that China's defense industry is producing sophisticated weapons "with impressive speed and quality, due in part to the highly effective manner in which Chinese defense companies are integrating commercial technologies into military systems," it writes. "Additionally, industrial

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U.S.-China Trade (US\$ Billions)

	1999	2000	2001	2002	2003	2004	2005	2006
U.S. Exports to China	13.1	16.3	19.2	22.1	28.4	34.7	41.8	55.2
Percent Change	-8%	24.4%	18.3%	14.6%	28.5%	22.2%	20.5%	32%
U.S. Imports from China	81.8	100	102.3	125.2	152.4	196.7	243.5	287.8
Percent Change	14.9%	22.3%	2.2%	22.4%	22.7%	28%	23.3%	18.2%
U.S. Balance	-68.7	-83.7	-83.1	-103.1	-124	-162	-201.7	-232.5

Source: U.S. International Trade Commission, 2007

Sagging U.S. Economy Should Not Hurt GE...*(Continued from page one)*

Middle East that are running huge trade surpluses with the United States.

"You know, as much as we want to belittle Europe, it's more competitive today — because of the common currency and things like that — than it was in the past," Immelt pointed out.

The dollar might be tanking, but it should not hurt GE. "We are almost perfectly hedged as a company," Immelt said.

U.S. exporters should be taking advantage of the dollar situation, but "if we don't turn that into a reduction in our deficit, we have to really worry at that point because that's going to say our competitiveness isn't where it should be." The United States — thanks to General Electric — might be good at exporting jet engines, "but if you're talking carpeting or appliances or things like that, then I'm not sure," said Immelt. "That's the conundrum."

More than 50 percent of GE's revenue this year is being generated from markets outside the United States. The company's overseas business is growing twice as fast as its U.S. operations, and overseas sales are projected to account for 55 percent of GE's total revenue of \$190 billion in 2008. When Immelt took the reins of GE five years ago, the company had earnings of \$11 billion on sales of \$110 billion. This year, earnings will top \$23 billion on sales of \$175 billion. In five years, Immelt predicts that 60 percent of GE's revenues will be generated from overseas.

"Our business outside the U.S. is going to grow 15 percent a year," he said. "Now I always say we're an American company. I'm proud to be an American company. I like being an exporter. I like being a good citizen of the United States. I want Congress to root for GE as a company that can win on a global stage. I don't want people to say, 'Gosh, there's something wrong with GE because they want to be a global company.' I think that's where we have to grow."

Immelt said he worries about whether GE is globalizing fast enough. "Can we be in enough places?" he asked. "Can we have enough talent? And can we avoid the inevitable backlash that's going on in this country and the world about what it means to be a global enterprise?"

This question is important because globalization is "profound," Immelt said. "It's irrefutable and it's irreversible. In other words, when we live in a country where basically our standard of living is being financed by the Chinese, Japanese and everybody that's buying our debt, you know what guys? It's here. If you're running for president or if you're a man on the street, we live in a global network that can't be reversed. Jobs

are spread around the world."

From the standpoint of General Electric, it's important for the company to "pick the right places to sell things and the right places to make things." The United States might be able to export products in the high tech, energy and health care sectors, but "certain regions are going to suffer," he said. "Certain regions [of the country] are going to pay. That's easy for me to say because I'm not running for any [political office]. But where businesses have failed, where I have failed is we haven't told the real valuable story about globalization. We haven't said, 'Look, the fact is that without globalization my jet engine business would have layoffs today. My gas turbine business would have layoffs.' We've done a lousy job telling the story."

The U.S. government has a role to play in making sure the United States remains a competitive nation, Immelt commented. If the U.S. government "wants to fix the trade deficit, it's got to be pushed," he said. "GE wants to be an exporter. We want to be a good citizen. Do we want to make a lot of money? Sure we do. But I think at the end of the day we've got to have a tax system or a set of incentives that promote what the government wants to do."

In many areas of the world, GE sells primarily to government customers. "In China, the government is the customer," he said. "When I go to China I go to a combination of the department of energy, transportation, health and human services all rolled into one. The leader sits there and says: 'You know what, Jeff? Your train order — you know — you've got to be more competitive. The turbine installation you had in the north is going well.' And he's going down and

beating me up like a purchasing manager at GM. I always leave saying, 'God, you know, this is impressive. These guys connect the dots. The level of connection is very impressive.'

The fate of the U.S. economy "is going to be decided in the next three to five years," he said. "You've got to have a real game plan for health care and energy and you've got to have a tax and public policy that tries to create the right mechanism for exports," Immelt said, referring later to Washington, D.C., as being "deaf."

The U.S. needs to start figuring out how to control health care costs. Increased costs will be paid by employees and the government, not by companies. There isn't a single company starting in business today that will provide health care for retirees — "zero retiree health care," said Immelt.

As a result, the government needs to "measure quality, pay for quality, drive process, drive standards and drive transparency around quality," said the GE

“Every business guy who’s lived in this universe for the last 30 years knows that if you drive metrics and process and quality, costs go down — in every other industry in the universe.”

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General Electric... (From page four)

boss. "Every business guy who's lived in this universe for the last 30 years knows that if you drive metrics and process and quality, costs go down — in every other industry in the universe."

With the government paying for 55 percent of health care, it needs to adopt metrics and transparency in its dealings with providers. "Government is an important player. I mean, they can change the world in a heartbeat," Immelt said.

"Is America going to lead?" Immelt asked rhetorically. "What's different today is the competitors out there. If I think about the country as a company, the competitors are better today. In 1982, when I joined GE, Japan was going to eat our lunch. Japan was going to crush us. Jack [Welch former GE CEO] sent us all to Japan to study process and we did. I learned a lot. I thank them for making me better. But you know what? Japan was always constrained by demographics, by population size. The Japanese were limited. Japan is an island. Let me tell you, China is not an island. It goes on forever. China's got perfect infrastructure. The government creates the backdrop for success. It is a very well controlled, shrewd, centrally driven economy. I just never cease to be impressed with how well the government of China does."

"Russia has every raw material the world needs. There is wealth in the Middle East unlike ever before. India's guys work seven days a week. They're high tech. They graduate a million and a half engineers a year. We're graduating a couple hundred thousand."

"We've got to compete. We've got to be smart — use our entrepreneurial ability. We've got to have more kids studying engineering. It's not going to be delivered by a five-minute sound bite in a presidential debate. It is what we have got to do."

Immelt worries that China's stock market could spell trouble. "NASDAQ in 1999 taught us something," he said. "That is, markets are not meant to trade at 70s PEs. I hope the Chinese are mature enough to understand that these [new public] companies aren't going to maintain these market caps. It's just not going to happen. The Chinese stock market can't trade at a 50, 60 or 70 PE into the future. It's just too hard to sustain.... There's just a little bit of air in that balloon."

GE's embrace of the green movement is paying off, said Immelt, who decided in 2004 that global warming caused by humans was "a technical fact." In Immelt's global travels, he sensed a "sea change" in the way society viewed environmental issues and that it was important for GE to get out in front. "I'm not an environmentalist at all," he said. "I golf, you know? I didn't come at this with any ideology. I was there to protect my investors and any CEO who doesn't know that when they're on the wrong side of society cannot win. I think that's what I get paid to do."

In 2001, wind turbines were more of a fad — "kind of a hula hoop" — than a real business venture, he noted. Wind turbines were generating electricity at 15 cents per kilowatt-hour. But the wind industry commercialized the technology and the cost of power from a turbine is now six cents a kilowatt-hour.

"I would give the Europeans credit," said Immelt. "The Europeans said in 2000-2001 that 10 percent of the energy in Europe was going to be renewable."

That didn't happen in the United States, where there was a belief that if such a mandate were put in place, prices of energy would go up.

The U.S. federal government needs to get its act together with regards to an energy policy that puts in place the incentives needed for U.S. companies to succeed in the global market. There are currently seven states that are debating legislation mandating greenhouse gas reductions. This is unproductive.

"I'd like for there to be a national standard," said Immelt. "I'd like to see a federal process that's intelligent, orderly and lays out real technical options. What we have that nobody else in the world has is we've got the most unbelievable entrepreneurial venture capital community that's

the envy of the world. Money that has historically gone to health care or software is now going to energy. The piece we need now is an aspirational energy policy that helps create the right incentives to see it take off. It's a job creator, not a destroyer. In the end, it adds high-tech jobs to this country and doesn't take them away."

Today, GE generates \$14 billion from all of its environmental product initiatives, from energy-efficient appliances, compact fluorescent lighting, hybrid locomotives and the GENx aircraft engine that's 25 percent more fuel efficient than the one it replaced. Of that total, \$7 billion is generated through renewable energy technologies.

The company is saving \$150 million in its factories by implementing energy conservation techniques. "I thought that was going to be an expense four years ago, but because of high energy costs, that's all become savings," he said.

Immelt said he's not happy with the company's stock price. At about \$40 a share, "it's clearly not exactly where I'd like to see it," he said. "If you buy the stock right now, it's a great value. It's going to appreciate and the next 18 months look great. We make \$2.20 a share this year; we're trading at a premium on the S&P. If we make \$2.50 next year, the stock's going to go up by 15 percent. I totally believe that. If people say the stock trades at about \$40 and the break-up value would be \$45, \$47 or \$50, I think the value of this company is going to be a hundred in a couple of years. You know?"

"Now that doesn't mean we shouldn't sell [divisions of the company]. We've sold plastics and insurance and we'll sell more things in the future. If somebody can run it better than we can, we should sell it and be very tough-minded about it...I've got to take care of GE investors first."

"I just never cease to be impressed with how well the government of China does."

Quebec...*(Continued from page one)*

Tax breaks aimed at stimulating private investment are necessary to improve productivity so Canadian companies can "compete against emerging economies and their low-cost labor," says the plan. "More financing will be made available to the manufacturing sector through tax-sheltered funds." The tax policies are supplemented by additional measures to increase research and innovation, build a qualified workforce and stress sustainable development.

The plan funds a five-year, \$51-million system to provide manufacturers with "productivity advice." Another \$3.5 million will be spent on "manufacturing networks headed up by industry leaders." The government will help establish a new network of angel investors to support entrepreneurs. Quebec subsidiaries of foreign businesses "will get more help landing worldwide mandates," says the plan. Another \$25 million will go toward helping manufacturers "undertake or consolidate development outside Quebec — to cover the full range of business development stages in foreign markets."

Seven million dollars will be spent on "technical validation and technology showcases to help businesses market the products they develop and make their first sales." And the plan calls for the government to "use any and all flexibility it has under intergovernmental agreements and existing laws and regulations to maximize spinoffs to Quebec manufacturers from Quebec government purchases."

The modernization and transformation of Quebec manufacturing "is well under way," say the plan. "The challenge now is to help manufacturers stay the course — or to get started if they have not already begun." To do this, the government is providing \$4 million to create five new "college technology transfer centers" in addition to the 35 that already exist. The Center for Industrial Research (CIRC) will have an updated mission that will be "refocused exclusively on manufacturers," says the plan.

The government will provide manufacturers with a 30 percent refundable income tax credit for workforce training that will cost the province \$178 million; \$8 million to help recruit workers in research and innovation; and initiate a recruitment effort outside of Quebec "through qualification recognition agreements in particular with France," says the plan.

In the area of green manufacturing, the province is going to invest \$25 million in a clean technologies venture capital fund with participation of private partners. The overall target is \$100 million in capital. It will provide \$10 million to companies to introduce cleaner, more energy efficient technologies.

"Reinvigorating Quebec's manufacturing sector will only be possible with the involvement and assistance of all concerned," says the plan. As such, the government is establishing a Manufacturers Council to be co-chaired by a manufacturing executive and the Minister of Economic Development, Innovation and Export Trade. "It will comprise other executives from the manufacturing sector, including heads of branch offices of foreign firms as well as representatives of

manufacturers' associations and worker organizations. The council's primary mission will be to educate the business community about the vital importance of the manufacturing sector and strengthen the industry's image, inform manufacturers about government programs, share strategic information, and put forward solutions to the sector's most pressing problems."

Export Control Overhaul Bill Introduced In House

Rep. Don Manzullo (R-Ill.) has introduced legislation aimed at modernizing the federal government's export control policy and "help American companies sell more defense-related goods and services overseas to our allies," he says.

The Defense Trade Controls Performance Improvement Act (H.R. 4246) would direct the State Department to hire more staff to reduce the massive backlog of export license applications. The State Department has only 42 licensing officers, and it takes them up to six months to get to an application.

By then, in many cases, it's too late: the order goes from the American company that cannot fill it, to a foreign firm that can. The number of officers reviewing import and export licenses would increase by 42 percent if the bill becomes law.

The legislation also streamlines the process by eliminating the license requirement for exports of spare parts on items already approved by the U.S. government. "If the Departments of State and Defense have approved the export of a major defense article to one of our closest allies, why are we requiring licenses for nuts, bolts, and brackets to keep those items working?" Manzullo asked. Other sponsors of the bill include Reps. Brad Sherman (D-Calif.), Joe Crowley (D-N.Y.) and Roy Blunt (R-Mo.).

U.S. Has No Strategy To Deal With Critical Materials

The United States industry and military have no system in place to assess their vulnerabilities to many hundreds of critical materials that are produced overseas, according to the National Research Council. "Decision makers in both the public and private sectors need continuous, unbiased and thorough information on the uses and possible supply restrictions of nonfuel minerals, but currently the federal government and the industries that use these materials do not collect these data with enough detail or frequency," says the council in its report "Minerals, Critical Minerals, and the U.S. Economy." The government's National Defense Stockpile does not keep track of the supply chains of critical materials, "which essentially removes the stockpile as an effective component of the nation's defense," says the report. "Minerals, Critical Minerals, and the U.S. Economy," and "Managing Materials for a 21st Century Military" are available from the National Academies Press by calling 202-334-3313.

China Commission...

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espionage provides Chinese companies an added source of new technology without the necessity of investing time or money to perform research. Chinese espionage in the United States, which now comprises the single greatest threat to U.S. technology, is straining the U.S. counterintelligence establishment.”

China is perfecting systems to carry out cyber attacks and disable satellites with high-energy lasers. It is building new generations of warships, fighter aircraft, submarines, missiles and spacecraft.

It is an energy hog and plans to significantly increase the use of fossil fuels, with “long-term negative environmental and strategic consequences for the United States,” says the commission. Its environmental problems could lead to unrest “that could challenge the Chinese Communist Party’s control of the country.”

The country has placed further restrictions on the press, freedom of expression and the ability for citizens to access information. “Chinese authorities have created one of the most effective information control regimes in the world,” says the commission. “China uses its controls to manage and manipulate the perceptions of the Chinese people, often promoting nationalism and xenophobia. Additionally, Beijing uses these controls to influence the way it is perceived by foreign populations such as in the United States. By manipulating international media reports written about China and denying pertinent information to the outside world on salient issues, including food and product safety and the outbreak of diseases, China’s actions have the potential to endanger the welfare of U.S. citizens.”

Among the commissions recommendations:

- Pass legislation that would define currency manipulation as an illegal export subsidy;
 - Determine the country of origin of U.S. weapon systems components;
 - Ensure adequate support for U.S. export control enforcement and counterintelligence efforts;
 - Ensure adequate support for protecting critical American computer networks and data;
 - Ensure U.S. access to and ability to use space;
 - Address weaknesses in U.S. intelligence capabilities focused on China’s military;
 - Engage China to address global climate change and environmental degradation;
 - Establish joint efforts with China to monitor, determine the costs of and prevent pollution; and
 - Assist Taiwan in strengthening its military.
- The report is located at <http://www.uscc.gov>.

Job And Income Growth For Scientists And Engineers Comes To An End

A 40-year period of constant growth in occupations for scientists and engineers has come to an end, according to the Commission on Professionals in Science and Technology. From 1950 until 2000, occupations in the sciences and engineering grew three times faster than the U.S. civilian labor force. “This long trend of strong U.S. demand for scientific and technical specialists ended after 2001 and had not resumed by 2006,” say the commission in a new study. “As a result, the science, technology, engineering and mathematical (STEM) share of total employment has been shrinking.”

There are many explanations for the trend, but few metrics to pinpoint the source of the problem. Imports of research, development and testing services have more than tripled over the past five years, “but it is not clear what these figures mean in terms of lost U.S. jobs,” says the study, by the commission’s STEM Workforce Data Project. The rise of offshore outsourcing of scientific and technical work “cannot be reliably measured at all,” but could be another factor. Skilled science and technical workers could be migrating to other fields, such as health care, education, finance and business.

“The great rise in information technology jobs that occurred in the 1990s has ended,” says the study. Employment in industrial engineering has continued to decline. Within the three professions tied to the chemical industry, employment losses have also continued. Some technical job areas are doing okay due to growing markets: aerospace engineering and medical scientists.

“Is U.S. science and technology adrift,” the center asks. “Of course it is....Some queasiness might be expected among people in the U.S. STEM workforce, given their diminishing presence in the economy, their frequent replacement with foreign labor located both here and abroad, continuing worries about the brief career life of one’s technical training and demands from many employers for total 24/7 concentration on immediate results — a point of view that may be reasonable in some business situations but which is not always so reasonable for activities like science, research and development that may require attention for years before yielding returns, if indeed there is any yield at all. Despite concerns like these, which are not entirely new, the persistence of STEM degree production over the years shows that many Americans believe that as long as the career prospects are reasonable, science or one of its allied applications is what they would like to do. There is no shortage whatever of interested people. What is in short supply are reasons to believe that technical careers will be worth the considerable investment they demand in time and training.”

The study also finds that real salary growth for most STEM workers has been flat or declining for the past 10 years.

Says Paul Kostek, vice president of career activities at the Institute of Electrical and Electronics Engineers: “If these trends continue — and knowledgeable observers think that they will — their impact on the health of American’s high-tech

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Honeywell Moves Electronic Material Division HQ To China

Honeywell has decided to move the headquarters of its Electronic Materials division from Arizona to China, as a means to keep close to its customers. The division says the move should not be viewed symbolically. "This business caters to the semiconductor manufacturing industry and most of that will be taking place — if not has already been taking place — in the Asia Pacific region," explains Honeywell spokesman Lance Chapman. "Taiwan has become very strong with foundries and China is an emerging area for that as well, so it's just to get closer to the customer."

Most of the growth of the semiconductor industry is taking place in Asia, which will soon account for more than 50 percent of semiconductor sales. "Taiwan is the powerhouse but there is a lot of potential in China, too," says Chapman. "They're building fabs in China." A new semiconductor fabrication plant (fab) can cost upwards of \$5 billion.

Honeywell Electronic Materials, part of the company's \$4.7-billion Specialty Materials division, will not be moving its U.S. manufacturing to China. It will keep operating plants in Spokane, Wash., Silicon Valley, Calif., Pennsylvania and Texas. The transfer of its headquarters "is not really changing anything other than the location of the leaders," says Chapman. "We've had to focus a lot of our energy on that region already, so what you're seeing today is a lot of flights going back and forth and what you'll be seeing tomorrow is a lot less flights, but nothing else really changes. It's taken for granted within the industry that if you're going to be in this industry, you have to serve the market where it is."

Honeywell China CEO Shane Tedjarati said the relocation of the company's global electronic materials headquarters to Shanghai "will further underline Honeywell's emphasis on China as an important platform to drive Honeywell's globalization." Honeywell, which issued an announcement on the move in China but not in the United States, has moved all of its Asian-Pacific headquarters for all of its divisions — aerospace, automation and controls and transportation systems — to Shanghai. It has also opened six R&D centers in China. The company employs more than 5,000 Chinese.

Is Honeywell becoming a Chinese corporation? "Honeywell is far from it," Chapman responds. "The overall corporation is well over \$30 billion so it would be silly to think that this is anything more than what it is. It's a company that deals with an industry

that has an amazing amount of growth in that region and if you want to be close to your customers this is one way to do it. Most of the manufacturing is in the United States and there is no change to that as we speak, so this is just where the leaders are."

USTR Claims Victory In China Subsidy Case

China's decision to terminate export subsidies that the United States claimed were illegal "represents a victory for U.S. manufacturers and their workers," said United States Trade Representative Susan Schwab on Nov. 29. "The agreement also demonstrates that two great trading nations can work together to settle disputes to their mutual benefit.... While many challenges still remain, today's news is concrete and welcome."

The memorandum of understanding with China will settle a WTO case the United States and Mexico initiated on February 2, 2007, concerning export subsidies for steel, wood products, information technology and many other products. "Most of the challenged subsidies were tied to exports, giving an unfair competitive advantage to Chinese products and denying U.S. manufacturers the chance to compete fairly with them in the United States and in their country markets," says the Office of the U.S. Trade Representative. "The remaining subsidies, known as 'import substitution' subsidies, encouraged companies in China to purchase Chinese-made goods instead of imports. These subsidies were designed to give Chinese-made goods a significant edge in the China market over high-quality, fairly priced goods from the United States and other countries."

The subsidies the USTR challenged were tax breaks benefiting foreign-invested enterprises, "which are any firms with even a small amount of foreign investment, and were made available in every manufacturing sector," said the USTR. Almost 60 percent of all exports from China came from foreign-invested enterprises, "and that figure is growing," said USTR.

"I have consulted closely with Congress as we have developed strategies for dealing with difficult issues like prohibited subsidies, and members with whom I have spoken appreciate the value of results over rhetoric," said Schwab. "I think this announcement makes clear that the administration's policy of serious dialogue and resolute enforcement is delivering real results. It clearly shows the wisdom of this approach over some legislative approaches that would simply impose retaliatory tariffs. What we have done will actually benefit U.S. manufacturers and workers. What we should avoid is a needlessly hostile relationship with China which will, in the long run, only hurt U.S. workers and consumers."

EPA Proposes Regulations On Ocean Ships

The Environmental Protection Agency has proposed regulations to reduce emissions from the large diesel marine engines that power container ships, cruise lines, tankers and bulk carriers. The proposal would require the use of new technology and lower sulfur diesel fuels to reduce nitrogen oxides and particulate matter from emissions.

"As foreign trade grows and new emissions controls take effect on other transportation sources, emissions from these ships comprise an increasing share of the nation's pollution inventory," says the EPA.

The proposed regulations would require a reduction of nitrogen oxide emissions of ships operating with new engines in U.S. ports by 15 to 25 percent by 2011 and by 80 percent or more by 2016 through the use of high efficiency catalytic after-treatment emission control technologies. Nitrogen oxide emissions for engines built before 2000 would be reduced by 20 percent by 2012.

Particulate matter and sulfur dioxide standards will be put in place by 2011 and "would apply to all vessels when they are operating in U.S. ports and coastal areas." Reductions of sulfur dioxide emissions will be achieved "through the use of low sulfur fuel or the use of exhaust gas cleaning technology," says EPA. The final rulemaking is expected by Dec. 17, 2009. For information, go to <http://www.epa.gov/otaq/oceanvessels.htm>.

THE CONFERENCE BOARD:

Carbon Reduction Investments Will Cost \$1.1 Trillion, Out Of \$77 Trillion In Total Investment

“The United States could reduce projected 2030 emissions of greenhouse gases by between one-third to one-half at manageable costs to the economy and without requiring big changes in consumer lifestyles,” says a new report from the Conference Board and McKinsey & Co. If the United States does nothing to reduce carbon emissions, they will increase by 35 percent by 2030 to 9.7 billion metric tons (gigatons). “Urgent” action is needed immediately, says the Conference Board.

In looking at 250 opportunities for reducing carbon emissions, substantial reductions can occur with using “proven and emerging high-potential technologies, but only if the U.S. pursues a wide array of options and moves quickly to capture gains from energy efficiency,” says the report, which the Conference Board describes as “an important turning point in the efforts to reduce greenhouse gases.” Almost 40 percent of the opportunity for greenhouse gas reduction identified “comes from options that more than pay for themselves over their lifetimes, thereby creating net savings for the economy,” says the study.

Carbon capture and storage from coal-fired power plants offers less than 11 percent of the total potential gas emission reductions identified.

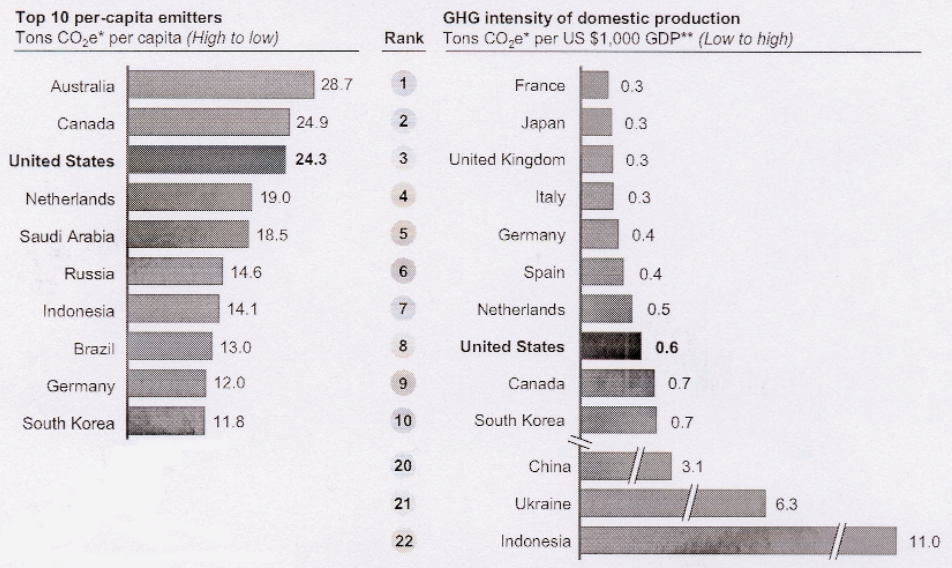
“Reducing emissions by three gigatons of carbon dioxide equivalents in 2030 would require \$1.1 trillion of additional capital spending or roughly 1.5 percent of the \$77 trillion in real investment the U.S. economy is expected to make over this period,” says the report. Five initiatives “pursued in unison could create substantial progress” toward emissions reductions. From the least costly to the most

costly, these initiatives are: Improving energy efficiency in buildings and appliances, which would reduce between 710 and 870 megatons of carbon dioxide equivalents by 2030; increasing fuel efficiency in vehicles and reducing carbon intensity of transportation fuels, (340 to 660 megatons); pursuing

various options across energy-intensive portions of the industrial sector (620 to 770 megatons); expanding carbon sinks such as forests (440 to 590 megatons); and reducing the carbon intensity of electric power production (800 to 1,570 megatons).

The report, produced in association with DTE Energy, Environmental Defense, Honeywell, National Grid, Natural Resources Defense Council, PG&E and Shell, should “stimulate an important national dialogue, one based on fact, analysis and quantitative metrics,” says Jon Spector, CEO of the Conference Board. The 107-page report, entitled “Reducing U.S. Greenhouse Gas Emissions: How Much at What Cost?” is located at http://www.mckinsey.com/client-service/ccsi/pdf/US_ghg_final_report.pdf.

Greenhouse Gas Emissions By Population & GDP — 2005



Job Growth For Scientists... (Continued from page seven)

workforce could be devastating. The one/two punch of reduced demand (fewer job opportunities) and wage depression (flat or declining real wages) will encourage incumbent mid-career and older STEM workers to leave for better job opportunities in other fields and discourage talented students from pursuing science and engineering careers. Although employers contend that an inadequate supply of appropriately skilled and properly motivated workers in the United States is forcing them to move jobs and facilities overseas, there is no credible economic evidence to support such claims.”

The report, “Is U.S. Science and Technology Adrift?” is located at https://www.cpst.org/stem/stem8_report.pdf.

How To Deal With A Bankrupt Customer Under The New Bankruptcy Code

BY KEITH MILES AURZADA
AND GWENDOLYN GODFREY

The number of business bankruptcies continues to rise, with 7,167 businesses declaring bankruptcy in the third quarter of 2007, according to accounts receivable insurer Euler Hermes ACI. Through the third quarter of this year, 20,152 companies have declared bankruptcy, which is more than the total for all of 2006 (19,695). Euler Hermes expects 30,000 companies to declare bankruptcy this year, up 51 percent from 2006. Driving the surge of bankruptcies is the rising cost of energy, raw materials and labor and the sagging housing market that is beginning to impact both consumer and business spending.

When a customer files bankruptcy it is incumbent upon the manufacturer to act quickly to ascertain which deliverables were made to the customer within the reclamation period; and send a timely written reclamation demand to the customer for the return of the goods. Taking these initial measures will very likely mean the difference between recovering a substantial sum of the outstanding balance owed by a bankrupt customer, and not being paid at all for goods shipped within the reclamation period.

Even though, as always, all collection efforts must cease as of the date that the customer files bankruptcy, the good news is that the new bankruptcy code has expanded the time period within which a reclaiming seller may exercise its state law right of reclamation in two important ways. First, the look-back period for reclamation of goods received by the debtor prior to the commencement of the bankruptcy has been expanded from 10 days to 45 days. This larger reach-back period potentially allows the reclaiming seller to realize a much larger portion of the outstanding debt owed by the bankrupt company than was previously permitted.

Second, the time period within which the reclaiming seller must make a reclamation demand has been expanded from 10 days to 20 days, if the customer files

bankruptcy prior to the expiration of the 45-day window. This longer time period allows the seller a few more critical days to gather the requisite bills of lading, delivery receipts and other supporting documentation so that a timely demand may be made on the debtor.

As with the old law, the customer must also have been insolvent when it received the goods, which is typically not much of a hurdle considering that the company filed bankruptcy. Once a company demands reclamation, it may, subject to bankruptcy court approval, collect the manufactured goods and resell them in order to recoup losses that the company would otherwise incur.

A seller that fails to timely provide notice of reclamation may not have the right to reclaim the goods themselves, but such seller may still have some back-up protection in the form of an administrative expense claim in the bankruptcy case, assuming the customer is administratively solvent and assuming the amount of money involved justifies pursuing a claim in the debtor's bankruptcy. Under the new law, this administrative expense claim is limited to the value of goods delivered to the debtor within 20 days before the commencement of the bankruptcy and the goods must have been acquired in the ordinary course of the debtor's business.

In addition to making a proper reclamation demand on the debtor, it is also prudent for the manufacturer to promptly file a proof of claim. The standard form proof of claim can be found on most bankruptcy courts' Web sites, and is a standard form that verifies the amount of the money owed to the company. However, as the rules of reclamation may vary from state to state, the best course of action is always to obtain counsel to ensure that the reclamation notices, proofs of claim, and any other applicable documents are complete and in proper form.

—Keith Miles Aurzada, Powell Goldstein, LLP
Dallas, Texas, 214-721-8041, kaurzada@pogolaw.com
—Gwendolyn Godfrey, Powell Goldstein, LLP
Atlanta, Ga., 404-572-4536, ggodfrey@pogolaw.com

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Editor & Publisher: Richard A. McCormack (richard@manufacturingnews.com)

Web Technical Coordinator: Krishna Shah (krishna@manufacturingnews.com)

Business Manager: Anne Anderson (anne@manufacturingnews.com)

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