demand will grow at an annual rate of about 4 to 5% in this decade, while U. S. demand will increase about 2 to 4% annually during the same time, according to Robert E. Wagner, president of the Potash and Phosphate Institute (Atlanta, Ga.). He projects "a fairly tight supply and demand balance for potash, at least in the first part of the decade."

New potash production in the U. S., Canada, Jordan, Brazil and Russia, most of which will come online before 1985, will help alleviate the situation. "If that weren't coming on, we'd probably have a shortfall in the latter part of the decade," observes Wagner. "It'll ...etty close for a few years. I don't see shortages, but a pretty tight situation in terms of supply and demand."

Canada will lead in expansions, with the Potash Corp. of Saskatchewan investing $2.5 billion in capacity enlargement this decade. Others adding capacity in Saskatchewan include Potash Co. of America, Kalium Chemicals, IMC, and Central Canada Potash. IMC is operating a new mine in western Manitoba, on an extension of the Saskatchewan reserve.

Other international expansions worthy of note include a 580,000-metric-ton/yr expansion of Israel's Dead Sea works that will come online in 1983. Domestically, Mississippi Chemical is studying an expansion of production to 800,000 tons/yr at its mines near Carlsbad, N.M.

Sulfur supplies and prices have been affected by the Iran-Iraq conflict and the Polish situation. "Sulfur has appeared to be very tight for the last year and is getting progressively tighter, as we have depleted our domestic inventories," Douglas says. The halt of the Iran-Iraq supplies has sent world prices up, varying at year's end from $133 to as high as $190, depending on the source and delivery point.

James Branscome
World News (Knoxville)

New patent law—a battle brews over alleged changes

Several legislators and concerned patent experts are saying that the guidelines spelling out how to grant patent rights to small businesses and universities will remove many of the concessions in the law itself.

☐ Industry and universities rejoiced last December, when the Carter Administration approved—as part of a larger bill to reform the U.S. patent system—a measure that automatically allows universities and small businesses exclusive rights to patents developed under contract (i.e., with government money). Until then, contractors seeking to patent the fruits of their labor had to fight lengthy and costly battles through a maze of restrictions imposed by the 26 federal agencies most involved with R&D funding.

Now, however, there is talk in government circles that the spirit of the law is being violated, and that the new University and Small Business Patent Procedures Act will be stripped of many of its concessions. Specifically, what some legislators who support the measure fear is that the federal-agency representatives chosen to write preliminary guidelines for the law will retain many of the agencies' old policies, making the patenting procedure just as difficult and costly as before.

At this point, hard evidence supporting this fear is difficult to come by, especially since—at presstime—the preliminary guidelines* have not been made public.

However, Washington sources familiar with the activities of the taskforce that has written these rules assert that the federal agencies themselves have been allowed to decide on individual issues whenever there has been some disagreement among the taskforce members.

All this is of vital importance to the chemical process industries, because such federal agencies as the U.S. Dept. of Energy, the Environmental Protection Agency, the National Science Foundation and others fund much of their R&D. Last year, the agencies' disbursements totaled $29 billion—about half of all R&D dollars spent in the U.S.

CAPITOL HILL IRE—There is no question that many important legislators, especially members of the Senate Judiciary Committee, which has jurisdiction over patent law, are concerned. Some have even written to David Stockman, head of the Office of Management and Budget. A sample letter, from Senator Strom Thurmond (R.-S.C., and head of the Judiciary Committee), reads: "It is my understanding that . . . much of the original intent of the University and Small Business Patent Procedures Act is being ignored or written out of the guidelines."

"I also understand that many of those on the drafting committee are representatives from the very agencies whose cumbersome and ineffective patent policies made this legislation necessary," writes Senator Lowell Weicker (R.-Conn.), chairman of the Select Committee on Small Business.

VESTED INTERESTS—The senator is



Credit: Wide World Photos

Sen. Thurmond has shown concern

*These will be published sometime this month. After a review, they will be reissued in final form before July 1, when the new patent law goes into effect.

Highlights of the new patent law

Public Law 96-517 is an omnibus bill that tries to update federal patent policies. The major part of the bill is the University and Small Business Patent Procedures Act, which originated in 1979 under the sponsorship of Senators Birch Bayh (D.-Ind.) and Robert Dole (R.-Kans.). Other parts of the bill pertain to filing fees, requests for citations of prior art, a request for a report on computerizing the Patent Office, and limitations on exclusive rights to computer programs. Some highlights of the law:

Chapter 38. Patent rights in inventions made with federal assistance—This entirely new chapter of patent law will automatically give to universities, nonprofit organizations and small businesses (generally defined as having less than 500 employees) the rights to any inventions made with partial or total federal funding. Contractors are required to disclose to the appropriate federal agency their intention of taking title to an invention and must make some attempt to market or license the invention within a "reasonable" period of time. If this is not done, the federal government retains the right to do this itself (known as "march-in rights").

Section 41. Patent fees—By late 1982, the Patent Office will set fees for applying for or maintaining patents. Design patents will cost 50% of the estimated cost for the Office to process them; other patents will have a fee of 25% of the estimated cost. By 1997, a system will be in place to charge a fee for maintaining a patent in force. This fee will be paid in three installments—3.5, 7.5 and 11.5 years after the patent is awarded, and will also be pegged to a 25% fraction of the cost of processing patents. In general, the new fees are expected to be double what the current fees are.

Rules are also laid out for the licensing of patents already owned by the government. This licensing may be exclusive or partially exclusive, and small businesses will have preference in receiving them.

Finally, a host of prior laws, ranging from the National Science Foundation Act of 1950 to the Solar Photovoltaic Energy Research and Development Act of 1978, are specifically superseded by the new law. Also superseded are Institutional Patent Agreements, a procedure that had been worked out several years ago between agencies and universities to speed patent clearances. Future acts of Congress will have to either comply with the new law or be specifically exempted from it.

Section 9—In this section, Congress instructs the Patent Office to make a report in the next two years on the feasibility of computerizing the data and retrieval systems used by the Office. Many testifiers at the Congressional hearings had complained of missing or lost patents, difficulties in obtaining existing patents that might relate to a patent application, and the delay—currently more than two years—in having a patent approved. The intent is that a computerized system might eliminate these problems.

referring to a taskforce of the Interagency Procurement Policy Committee, which has been writing the preliminary regulations. The group is made up of representatives of federal agencies, and is headed by James Denny, who also serves as an assistant general counsel for DOE.

(The new patent law originally assigned the writing of the guidelines to the Office of Federal Procurement Policy [OFPP], which is part of the Office of Management and Budget, but OFPP passed on this task to the Interagency group. OFPP itself appears to see no conflict of interest in the change. According to Fred Dietriech, an associate administrator with the group, "The interagency taskforce will be implementing the law; in my view, there is nothing better than to have them writing the guidelines.")

According to Denny, there is nothing wrong in his group's taking on the responsibility. "We offered to help out," he says, "and they took us up on it. Besides, once we're through writing the regulations, we will give them back to OFPP, and they're perfectly free to tear them up if they want to."

Not really, says Joseph Allen, an assistant to Senator Charles Mathias (R.-Md., and on the Judiciary Committee). "Once they are issued, it will be next to impossible to change them," he argues. "If they start off on the wrong track from the beginning, the changes made afterwards will amount to band-aids that cannot correct fundamental problems."

"Agency personnel," he adds, "will tend to skew the implementing regulations to justify their old policies, and we suspect that's just what they're doing right now."

MAIN OBJECTIONS—High on the legislators' list of concerns is the issue of consistency among the many agencies funding R&D. Experts who testified in Congressional hearings on government patent-policy over the past two years note that, until now, each of the 26 federal agencies that are heavy R&D sponsors has had its own policy, and frequently has been inconsistent in its application.

In the past, for instance, the National Aeronautics and Space Administration would not give the protection of exclusive patent rights, which many feel is necessary to justify developmental costs. DOE had a policy of reviewing projects on a case-by-case basis, which meant that contractors never knew upon starting the work whether patent rights could be obtained. And the Dept. of the Interior simply never conferred any patent rights.

The new law is supposed to do away with all this. But Allen and others insist that, in writing the guidelines, members of the taskforce have let the agencies rule on individual issues whenever they have been unable to agree on something.

"Each agency obviously has its own bailiwick to protect," he notes, adding that "we're afraid that the patent law is changing from being a convenience to small businesses and universities to being a convenience of the agencies."

SOME LOOPHOLES—Some observers also are concerned that aspects of the patent law that lend themselves to broad interpretation will be shaped so as to favor the federal agencies.

Howard Bremer, past president of the Soc. of University Patent Administrators (University of Wisconsin, Madison), cites Section 202 of the law as an example. This stipulates that contractors can keep patent rights except under "exceptional circumstances" to be determined by the agencies. "If these 'exceptional circumstances' are interpreted broadly enough, it will negate the intent of the law," he says.

Another area of ambiguity is the time requirement for filing progress reports and requests to take title to inventions. The new law states only that such reports must be made within "a reasonable time." Bremer and others fear that if the preliminary guidelines specify a short-enough period, it will be next to impossible for researchers with limited manpower to file the necessary paperwork. If this happened, patent rights would revert to the federal agency, and this would "emasculate the law," says Bremer.

Nicholas Basta

Soviets take aim at chemical industry

☐ The Soviet chemical industry, which has been the target of repeated official attacks for failing to achieve output goals, again bore the brunt of high-level criticism at last month's 26th Communist Party Congress in Moscow. No chemical ministry representative addressed the Congress, and even party chief Leonid Brezhnev took time out from his economic report to the Congress to criticize the chemical sector.

While laying out the party's plans for increased production of consumer goods in the 1981-85 five-year plan, Brezhnev said: "We look to the Ministry of the Chemical Industry for substantial advances in the production of synthetic fibers and fabrics, plastics, dyestuffs and other materials needed to increase the quantity and, most important of all, improve the quality of consumer goods." The plan includes a rise of nearly 50% in fertilizer output, from this year's estimated 104 million metric tons/yr, to 150-155 million. The previous plan failed to raise production to 143 million by 1980.

Markets and processes star at oil conference

Ways to process heavy fractions, and product-demand predictions, attracted the interest of attendees at a recent meeting on crude oil and refining.

☐ Oil refiners know that they will be processing increasing quantities of heavier, more-sour crude in coming years, and they would like to have a clear picture of the demand for petroleum products in this decade. Both topics were well covered at a two-day conference* on crude oil and refining, held in New York City in late February. Several speakers assessed a handful of conversion processes for heavier oil, and others presented forecasts of petroleum-product demand for the U.S. and Western Europe.

A GENERAL DECLINE—In the U.S., the picture is one of weakening demand for petroleum products during the 1980s (Table I); Western European needs will grow, but at a slower pace than in previous years (Table II). In both regions, lighter products—e.g., distillates—will fare better than "bottom-of-the-barrel" residual fuel oils.

In the U.S., petroleum was forecast as the only major energy source that will register a decline in demand during 1980-85, according to John H. Lichtblau, executive director of conference-cosponsor PIRF. Oil-product consumption by 1985 could fall perhaps a half-million bbl/d, to 16.5 million bbl/d. On the other hand, overall U.S. energy usage should grow by 1.25%/yr during that period.

Across the Atlantic, demand for oil products should actually show some small growth—from last year's 13.8 million bbl/d to 14.6 million in 1990—says Walter L. Newton, managing director of London-based consultant Petroleum Economics Ltd. This growth (about 0.6%/yr) compares with an annual expansion of 2% for total energy demand, which should reach an oil-equivalent level of 31.4 million bbl/d by 1990.

* Sponsored by McGraw-Hill's *Platt's Oilgram News*, and the Petroleum Industry Research Foundation (PIRF), New York City.

On both sides of the Atlantic, growing demand for petrochemical feedstocks will boost that sector of the petroleum product slate—in Table I, this is seen in the product category labeled "other." (In fact, it is the only U.S. item to show a significant demand increase.) In Europe, the demand for petrochemical feedstocks—naphtha's principal use—will grow at a pace of slightly less than 3%/yr during the 1980s, according to Newton. Naphtha's role for this purpose will be limited. Reason: increased use of natural-gas liquids as a feedstock.

Western Europe's demand for gasoline should grow at 2%/yr—the highest for any major product sector there. In the U.S., however, gasoline demand should drop—"principally because automobiles will continue to become more fuel-efficient," reasons Lichtblau. (Fleet average mileage in the U.S. should improve to 18-19 mpg by 1985, compared to today's 15.) Fuel efficiency in Europe is also expected to increase, but since "motor cars are already smaller than in the U.S., the scope for this is much more limited," adds Newton.

As for other products, jet fuel will remain relatively stable in the U.S.; small growth is expected in Europe. Middle-distillate demand on both sides of the Atlantic will show modest growth, as transportation uses (i.e., diesel fuel) increase, but as demand for fuel oil declines.

On the downside, residual fuel oil will suffer in both market areas. A drop of almost 20% is forecast for Europe—largely due to reduced demand in the industrial sector. In the U.S., residual-fuel-oil demand, which reached its peak in 1978, and has since fallen off by 0.5 million bbl/d, will continue to decline—but at a slower pace over the next 5 years.