FOIA Number: 2017-1094-F

FOIA MARKER

This is not a textual record. This is used as an administrative marker by the William J. Clinton Presidential Library Staff.

Collection/Record Group: Clinton Presidential Records

Subgroup/Office of Origin: WH Task Force on Climate Change

Series/Staff Member: Roger Ballentine; Paul Bledsoe; Julie Anderson

Subseries:

OA/ID Number: 41300

FolderID:

Folder Title:
Oil/Energy, New Energy Technology

Stack:	Row:	Section:	Shelf:	Position:
S	100	3	10	1

THE WALL STREET JOURNAL.

INTERNET ADDRESS: http://wsj.com

WEDNESDAY, DECEMBER 15, 1999

VOL. CCXXXIV NO. 117 EE/WO ★★★

Blunted Spike

The Price of Oil Has Doubled This Year; So, Where's the Recession?

Petroleum Is Less Relevant In New Economy; Users Refine Hedging Skills

On a Par With 'Pork Bellies'

By Steve Liesman
And Jacob M. Schlesinger
Staff Reporters of The Wall Street Journal

Oil prices spiked to their highest level in nearly a decade last month. But when the consumer price index was released yesterday, it was up a whispery 0.1%. How is this possible? After all, this is *oil* – the stuff that helped fuel recessions in 1973, 1980 and 1990. Why aren't rising oil prices walloping the economy the way they used to?

Part of the answer can be found at LTV Corp. The Cleveland steelmaker is responding to this year's more than doubling of petroleum prices by flicking a switch. Using technology it installed over the past decade, it is shifting the fuel that fires its blast furnaces and boilers to natural gas from oil. Computer modeling lets LTV know when it's time to make the change.

Next, consider UAL Corp.'s United Airlines. The Chicago air carrier paid about the same for jet fuel in the third quarter as it did a year earlier, thanks to futures markets that let it lock in long-term prices. Good thing, too, since competition has hindered air carriers from pushing through broad-based fare increases.

Indeed, nationwide, the same forces that have propelled the U.S. economy through the 1990s – new technology, greater productivity, deregulation and sophisticated financial markets – are cushioning the blow from oil's jump to more than $25 a barrel from a February low of $11.37 a barrel.

'Startling Changes'

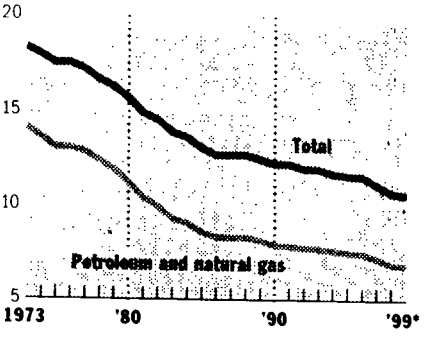
True, oil is the main reason consumer prices have risen at a 2.7% annual rate so far this year, up a full percentage point from 1998. But inflation still remains tame. In fact, last month's CPI increase was half the rate of October's and the lowest monthly rise since June.

That's because oil has become less relevant as the U.S. economy moves away from manufacturing and toward services. Fuel-gulping manufacturers accounted for only 17% of the economy in 1997, down from 22% in 1977. The decline's impact has been so pronounced that even Oil Minister Ali Naimi of Saudi Arabia, the world's biggest petroleum producer, lamented in a speech last week in Washington the "startling changes" that have reduced oil's importance to the world's industrialized economies.

Among them: U.S. oil expenditures have fallen to an estimated 3% of gross domestic product from a high of 8.5% in 1981, according to the U.S. Energy Information Administration. Suggesting that the growth of the Internet and the service sector has produced lasting changes in the economy, the U.S. in 1997 and 1998 posted its sharpest energy-efficiency gains in a decade, according to an analysis by the nonprofit Center for Energy and Climate Solutions. In both years, energy consumed per dollar of GDP fell by 4%, compared with the previous decade's average decline of less than 1% a year.

Reduced Impact

Energy consumption per dollar of gross domestic product, in thousands of BTUs



*Average of first and second quarter

Source: Energy Information Administration

Given that trend, "businesses should be spending no more time anguishing over oil prices then they do about pork bellies," says Mark Mills, senior fellow at the Competitive Enterprise Institute, a Washington think tank.

Of course, some industries still feel like they are over a barrel when oil prices climb. Hedging can't delay the pain forever, so airlines and other transportation businesses eventually feel the pinch. In recent weeks, trucking companies have begun to demand higher rates, citing higher fuel costs. And this year's oil-driven rise in the CPI will boost labor costs next year, since many wage contracts are pegged to that index.

The real test may be yet to come. If industries stock up on fuel ahead of the New Year or a lengthy cold snap grips the Northeast, some analysts think oil prices could creep above $30 a barrel – a level seen only briefly during the Gulf War. That scenario worries some economists. If prices reach that height and stay there, "economic activity slows, and the trade deficit worsens," says oil economist Phil Verleger of the Brattle Group, a consulting firm based in Cambridge, Mass. "It can be a prescription for a fairly serious and sharp recession."

So ingrained is the perceived impact of oil prices on the economy that some worry

Please Turn to Page A10, Column 1

Oil Prices Become Less Relevant

Continued From First Page

higher prices will create inflationary expectations all their own. But economists say that even at today's prices, oil and its derivatives are relatively cheap. Adjusted for inflation and excluding taxes, a gallon of gasoline is 10 cents cheaper today than it was in 1973, according to data from the American Petroleum Institute and the Energy Department.

Meanwhile, those industries that still rely heavily on oil have learned to squeeze more out of every drop. In 1981, for instance, jet fuel accounted for 29.7% of airlines' operating expenses, says the Air Transport Association. With new energy-saving technologies, such as two-engine planes with the same kick as the old three-engine versions, fuel now represents only 10% of the industry's costs.

The sport-utility vehicle craze has put more gas-hungry cars on the highways. But computer-controlled fuel injection and new transmission technologies have raised the overall efficiency of the nation's auto fleet by about 5% since 1990. The average American car was driven about 2,000 more miles last year than in 1973, but it used about 200 gallons less gasoline, the Transportation Department says.

For their part, energy-intensive manufacturers, such as LTV, have protected themselves from oil-price swings by diversifying their fuel sources. Natural gas, in particular, has become a popular alternative, because it is plentiful and relatively cheap. "Just 30 days ago, we were in the process of ramping down gas and ramping up oil," says Marty Suhoza, LTV's director of energy and metals purchasing. "Now we're doing just the opposite," he adds. "Our average fuel prices are fine."

When the first oil embargo hit in 1973, almost 17% of the nation's electricity was generated by burning more than 560 million barrels of oil. Today, with utilities deregulating and facing more competition, 3.2% of the nation's electricity is generated with the use of just 178 million barrels of oil. Coal, natural gas and nuclear power have taken up the slack.

In Silicon Valley, the heart of the New Economy, Santa Clara County added more than 150,000 jobs between 1994 and 1998 while area utilities relied almost exclusively on natural gas and renewable resources, such as hydroelectric power, to fill the new demand. California's environmental laws also resulted in a wholesale shift away from oil. The state's utilities, which burned 12 million barrels of oil in 1990, used just 103,000 barrels in 1998.

On the financial-management front, the explosion over the past five years in the number of companies using financial markets to hedge their energy costs has left the U.S. better able to absorb an oil jolt.

United Parcel Service of America Inc. has hedged nearly all its oil purchases for next year, and as a result, "we've removed ourselves from the spot market," says spokesman Norman Black. Of course, if oil prices stay where they are for the next year or so, the shipping company ultimately will face higher costs. But, "this gives us the flexibility to build our whole budget for next year with a predictable number," Mr. Black says. "That allows us to better manage our cash flow."

The oil-price jump also is coming at a time of phenomenal cost-cutting, thanks in part to the magic of the Internet. Alaska Airlines, for example, now sells 8% of its tickets via its Web site, up from 3% a year ago. Its $7.5 million-a-year savings is about half its cost of higher fuel prices.

Even if oil-dependent companies can't completely offset higher fuel costs, the odds those pressures will translate into significant inflation are much lower today than they were 10 or 20 years ago. Through the 1980s and early 1990s, "we had pass-through economics," says Gary Williams, vice president for supply-chain management for Borg-Warner Automotive Inc.'s Indiana powertrain systems division. Contracts had built-in price increases pegged to wholesale-prices rises. "Today, most contracts have fixed prices with price-downs" or built-in cuts, Mr. Williams says. So far, Borg-Warner's suppliers haven't sought higher prices to offset higher energy costs. "Companies are reluctant to be the first guy to ask for a price increase," he says.

In other industries, a capital-investment boom and competition have tempered oil's impact. With new factories slated to open next year in western Canada, an additional two billion pounds of polyethylene, a petrochemical used to make plastic bags, will be aimed at the U.S. market, a 10% increase, says Earl Simpson, a senior consultant at Pace Consultants Co. of Houston. "There's too much competition to hold prices up," he adds.

Like corporate executives, economic policy makers also have absorbed painful lessons from earlier oil shocks, and appear better poised to handle a rerun. In retrospect, most economists believe that the Federal Reserve erred in the 1970s by keeping interest rates low to make sure oil-related production cuts didn't push up unemployment. But the easy money accentuated oil's inflationary impact, leading to double-digit price increases.

Today's Fed is much more aggressive about pre-empting inflation, and today's economy gives the central bank more breathing space. With the economy growing at well above a 3% annual clip and the unemployment rate at a 29-year low of 4.1%, the Fed can afford to fight inflation by cooling growth and pushing joblessness higher. Alternatively, the Fed has ample

The politics of oil also have changed radically over the past two decades. The most powerful producers have learned that higher prices are risky, encouraging conservation efforts and new producers, who are harder to control. That may not be obvious from the current state of petro-politics. After all, the main reason oil prices have soared is that the Organization of Petroleum Exporting Countries, along with nonmembers Mexico and Norway, agreed to cut production, and compliance has been unexpectedly good. The group is hoping to make up for a glut of oil in 1996 and 1997 that sent prices tumbling as production increased and Asian demand fell.

With world inventories reduced, many expect OPEC to increase production again when the current agreement expires in March. At meetings last week with U.S. Energy Secretary Bill Richardson, Mr. Naimi of Saudi Arabia and Sheik Saud Nasser Al-Sabah assured Mr. Richardson their interest was in stable prices, not an oil crisis. That reflects an improvement in relations since 1973, when the U.S. learned in a terse cable that oil supplies to its Sixth Fleet in the Mediterranean and U.S. forces in Europe were being shut off, as the Arab nations launched their oil embargo.

As a result of all these factors, oil experts are betting on lower prices next year, even if there is another wintertime spike. While spot oil prices now trade at around $25 a barrel for January delivery, futures contracts for delivery one year from now sell for about $5 less per barrel.

Producers know there is much technology waiting in the wings to displace oil if they allow a sustained price spike. Hybrid automobiles, which use fuel cells and gasoline engines, as well as teleconferencing are just a crude crisis away from wider use, says Joseph Romm, a former assistant energy secretary and now director of the nonprofit Center for Energy and Climate Solutions.

That's why the oil industry has been undergoing its own revolution. Many oil companies are producing more natural gas. They are even joining with auto makers to develop alternative fuels and moving into the power-generation business. And, at Texaco Inc.'s Houston research facility, geologists are using a new computer-based technology to figure out the best place to drill for oil and the optimum method of extracting it.

Texaco earlier this year announced its largest discovery in 32 years, a massive field underneath about 5,000 feet of water off the coast of Nigeria. Without the greater certainty offered by the three-dimensional seismic data the new technology generates, companies could never afford to drill for crude a mile or more below the ocean's floor.

Assessing the seismic data, which once took 10 or 15 people, now takes one or two. Development planning times that took months or years now takes weeks. "The visualization technology will allow our crop yields to go up and reduce our risk," says Michael Zeitlin, a pioneer of the technology. "It's going to keep the cost of oil relatively flat and help us maintain oil prices at a level that is competitive with other energy sources."

THE WALL STREET JOURNAL.

VOL. CCXXXIV NO. 117 EE/WO ★★★ WEDNESDAY, DECEMBER 15, 1999 INTERNET ADDRESS: http://wsj.com

Blunted Spike

The Price of Oil Has Doubled This Year; So, Where's the Recession?

Petroleum Is Less Relevant In New Economy; Users Refine Hedging Skills

On a Par With 'Pork Bellies'

By Steve Liesman
And Jacob M. Schlesinger
Staff Reporters of The Wall Street Journal

Oil prices spiked to their highest level in nearly a decade last month. But when the consumer price index was released yesterday, it was up a whispery 0.1%. How is this possible? After all, this is *oil* – the stuff that helped fuel recessions in 1973, 1980 and 1990. Why aren't rising oil prices walloping the economy the way they used to?

Part of the answer can be found at LTV Corp. The Cleveland steelmaker is responding to this year's more than doubling of petroleum prices by flicking a switch. Using technology it installed over the past decade, it is shifting the fuel that fires its blast furnaces and boilers to natural gas from oil. Computer modeling lets LTV know when it's time to make the change.

Next, consider UAL Corp.'s United Airlines. The Chicago air carrier paid about the same for jet fuel in the third quarter as it did a year earlier, thanks to futures markets that let it lock in long-term prices. Good thing, too, since competition has hindered air carriers from pushing through broad-based fare increases.

Indeed, nationwide, the same forces that have propelled the U.S. economy through the 1990s – new technology, greater productivity, deregulation and sophisticated financial markets – are cushioning the blow from oil's jump to more than $25 a barrel from a February low of $11.37 a barrel.

'Startling Changes'

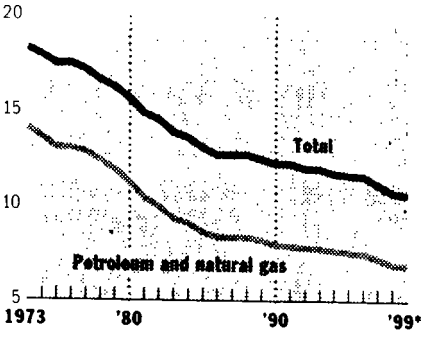
True, oil is the main reason consumer prices have risen at a 2.7% annual rate so far this year, up a full percentage point from 1998. But inflation still remains tame. In fact, last month's CPI increase was half the rate of October's and the lowest monthly rise since June.

That's because oil has become less relevant as the U.S. economy moves away from manufacturing and toward services. Fuel-gulping manufacturers accounted for only 17% of the economy in 1997, down from 22% in 1977. The decline's impact has been so pronounced that even Oil Minister Ali Naimi of Saudi Arabia, the world's biggest petroleum producer, lamented in a speech last week in Washington the "startling changes" that have reduced oil's importance to the world's industrialized economies.

Among them: U.S. oil expenditures have fallen to an estimated 3% of gross domestic product from a high of 8.5% in 1981, according to the U.S. Energy Information Administration. Suggesting that the growth of the Internet and the service sector has produced lasting changes in the economy, the U.S. in 1997 and 1998 posted its sharpest energy-efficiency gains in a decade, according to an analysis by the nonprofit Center for Energy and Climate Solutions. In both years, energy consumed per dollar of GDP fell by 4%, compared with the previous decade's average decline of less than 1% a year.

Reduced Impact

Energy consumption per dollar of gross domestic product, in thousands of BTUs



*Average of first and second quarter

Source: Energy Information Administration

Given that trend, "businesses should be spending no more time anguishing over oil prices then they do about pork bellies," says Mark Mills, senior fellow at the Competitive Enterprise Institute, a Washington think tank.

Of course, some industries still feel like they are over a barrel when oil prices climb. Hedging can't delay the pain forever, so airlines and other transportation businesses eventually feel the pinch. In recent weeks, trucking companies have begun to demand higher rates, citing higher fuel costs. And this year's oil-driven rise in the CPI will boost labor costs next year, since many wage contracts are pegged to that index.

The real test may be yet to come. If industries stock up on fuel ahead of the New Year or a lengthy cold snap grips the Northeast, some analysts think oil prices could creep above $30 a barrel – a level seen only briefly during the Gulf War. That scenario worries some economists. If prices reach that height and stay there, "economic activity slows, and the trade deficit worsens," says oil economist Phil Verleger of the Brattle Group, a consulting firm based in Cambridge, Mass. "It can be a prescription for a fairly serious and sharp recession."

So ingrained is the perceived impact of oil prices on the economy that some worry

Please Turn to Page A10, Column 1

Oil Prices Become Less Relevant

Continued From First Page

higher prices will create inflationary expectations all their own. But economists say that even at today's prices, oil and its derivatives are relatively cheap. Adjusted for inflation and excluding taxes, a gallon of gasoline is 10 cents cheaper today than it was in 1973, according to data from the American Petroleum Institute and the Energy Department.

Meanwhile, those industries that still rely heavily on oil have learned to squeeze more out of every drop. In 1981, for instance, jet fuel accounted for 29.7% of airlines' operating expenses, says the Air Transport Association. With new energy-saving technologies, such as two-engine planes with the same kick as the old three-engine versions, fuel now represents only 10% of the industry's costs.

The sport-utility vehicle craze has put more gas-hungry cars on the highways. But computer-controlled fuel injection and new transmission technologies have raised the overall efficiency of the nation's auto fleet by about 5% since 1990. The average American car was driven about 2,000 more miles last year than in 1973, but it used about 200 gallons less gasoline, the Transportation Department says.

For their part, energy-intensive manufacturers, such as LTV, have protected themselves from oil-price swings by diversifying their fuel sources. Natural gas, in particular, has become a popular alternative, because it is plentiful and relatively cheap. "Just 30 days ago, we were in the process of ramping down gas and ramping up oil," says Marty Suhoza, LTV's director of energy and metals purchasing. "Now we're doing just the opposite," he adds. "Our average fuel prices are fine."

When the first oil embargo hit in 1973, almost 17% of the nation's electricity was generated by burning more than 560 million barrels of oil. Today, with utilities deregulating and facing more competition, 3.2% of the nation's electricity is generated with the use of just 178 million barrels of oil. Coal, natural gas and nuclear power have taken up the slack.

In Silicon Valley, the heart of the New Economy, Santa Clara County added more than 150,000 jobs between 1994 and 1998 while area utilities relied almost exclusively on natural gas and renewable resources, such as hydroelectric power, to fill the new demand. California's environmental laws also resulted in a wholesale shift away from oil. The state's utilities, which burned 12 million barrels of oil in 1990, used just 103,000 barrels in 1998.

On the financial-management front, the explosion over the past five years in the number of companies using financial markets to hedge their energy costs has left the U.S. better able to absorb an oil jolt.

United Parcel Service of America Inc. has hedged nearly all its oil purchases for next year, and as a result, "we've removed ourselves from the spot market," says spokesman Norman Black. Of course, if oil prices stay where they are for the next year or so, the shipping company ultimately will face higher costs. But, "this gives us the flexibility to build our whole budget for next year with a predictable number," Mr. Black says. "That allows us to better manage our cash flow."

The oil-price jump also is coming at a time of phenomenal cost-cutting, thanks in part to the magic of the Internet. Alaska Airlines, for example, now sells 8% of its tickets via its Web site, up from 3% a year ago. Its $7.5 million-a-year savings is about half its cost of higher fuel prices.

Even if oil-dependent companies can't completely offset higher fuel costs, the odds those pressures will translate into significant inflation are much lower today than they were 10 or 20 years ago. Through the 1980s and early 1990s, "we had pass-through economics," says Gary Williams, vice president for supply-chain management for Borg-Warner Automotive Inc.'s Indiana powertrain systems division. Contracts had built-in price increases pegged to wholesale-prices rises. "Today, most contracts have fixed prices with price-downs" or built-in cuts, Mr. Williams says. So far, Borg-Warner's suppliers haven't sought higher prices to offset higher energy costs. "Companies are reluctant to be the first guy to ask for a price increase," he says.

In other industries, a capital-investment boom and competition have tempered oil's impact. With new factories slated to open next year in western Canada, an additional two billion pounds of polyethylene, a petrochemical used to make plastic bags, will be aimed at the U.S. market, a 10% increase, says Earl Simpson, a senior consultant at Pace Consultants Co. of Houston. "There's too much competition to hold prices up," he adds.

Like corporate executives, economic policy makers also have absorbed painful lessons from earlier oil shocks, and appear better poised to handle a rerun. In retrospect, most economists believe that the Federal Reserve erred in the 1970s by keeping interest rates low to make sure oil-related production cuts didn't push up unemployment. But the easy money accentuated oil's inflationary impact, leading to double-digit price increases.

Today's Fed is much more aggressive about pre-empting inflation, and today's economy gives the central bank more breathing space. With the economy growing at well above a 3% annual clip and the unemployment rate at a 29-year low of 4.1%, the Fed can afford to fight inflation by cooling growth and pushing joblessness higher. Alternatively, the Fed has ample

The politics of oil also have changed radically over the past two decades. The most powerful producers have learned that higher prices are risky, encouraging conservation efforts and new producers, who are harder to control. That may not be obvious from the current state of petro-politics. After all, the main reason oil prices have soared is that the Organization of Petroleum Exporting Countries, along with nonmembers Mexico and Norway, agreed to cut production, and compliance has been unexpectedly good. The group is hoping to make up for a glut of oil in 1996 and 1997 that sent prices tumbling as production increased and Asian demand fell.

With world inventories reduced, many expect OPEC to increase production again when the current agreement expires in March. At meetings last week with U.S. Energy Secretary Bill Richardson, Mr. Naimi of Saudi Arabia and Sheik Saud Nasser Al-Sabah assured Mr. Richardson their interest was in stable prices, not an oil crisis. That reflects an improvement in relations since 1973, when the U.S. learned in a terse cable that oil supplies to its Sixth Fleet in the Mediterranean and U.S. forces in Europe were being shut off, as the Arab nations launched their oil embargo.

As a result of all these factors, oil experts are betting on lower prices next year, even if there is another wintertime spike. While spot oil prices now trade at around $25 a barrel for January delivery, futures contracts for delivery one year from now sell for about $5 less per barrel.

Producers know there is much technology waiting in the wings to displace oil if they allow a sustained price spike. Hybrid automobiles, which use fuel cells and gasoline engines, as well as teleconferencing are just a crude crisis away from wider use, says Joseph Romm, a former assistant energy secretary and now director of the nonprofit Center for Energy and Climate Solutions.

That's why the oil industry has been undergoing its own revolution. Many oil companies are producing more natural gas. They are even joining with auto makers to develop alternative fuels and moving into the power-generation business. And, at Texaco Inc.'s Houston research facility, geologists are using a new computer-based technology to figure out the best place to drill for oil and the optimum method of extracting it.

Texaco earlier this year announced its largest discovery in 32 years, a massive field underneath about 5,000 feet of water off the coast of Nigeria. Without the greater certainty offered by the three-dimensional seismic data the new technology generates, companies could never afford to drill for crude a mile or more below the ocean's floor.

Assessing the seismic data, which once took 10 or 15 people, now takes one or two. Development planning times that took months or years now takes weeks. "The visualization technology will allow our crop yields to go up and reduce our risk," says Michael Zeitlin, a pioneer of the technology. "It's going to keep the cost of oil relatively flat and help us maintain oil prices at a level that is competitive with other energy sources."

THE WALL STREET JOURNAL.

VOL. CCXXXIV NO. 117 EE/WO ★★★ WEDNESDAY, DECEMBER 15, 1999 INTERNET ADDRESS: http://wsj.com

Blunted Spike

The Price of Oil Has Doubled This Year; So, Where's the Recession?

Petroleum Is Less Relevant In New Economy; Users Refine Hedging Skills

On a Par With 'Pork Bellies'

By Steve Liesman
And Jacob M. Schlesinger
Staff Reporters of The Wall Street Journal

Oil prices spiked to their highest level in nearly a decade last month. But when the consumer price index was released yesterday, it was up a whispery 0.1%. How is this possible? After all, this is *oil* – the stuff that helped fuel recessions in 1973, 1980 and 1990. Why aren't rising oil prices walloping the economy the way they used to?

Part of the answer can be found at LTV Corp. The Cleveland steelmaker is responding to this year's more than doubling of petroleum prices by flicking a switch. Using technology it installed over the past decade, it is shifting the fuel that fires its blast furnaces and boilers to natural gas from oil. Computer modeling lets LTV know when it's time to make the change.

Next, consider UAL Corp.'s United Airlines. The Chicago air carrier paid about the same for jet fuel in the third quarter as it did a year earlier, thanks to futures markets that let it lock in long-term prices. Good thing, too, since competition has hindered air carriers from pushing through broad-based fare increases.

Indeed, nationwide, the same forces that have propelled the U.S. economy through the 1990s – new technology, greater productivity, deregulation and sophisticated financial markets – are cushioning the blow from oil's jump to more than $25 a barrel from a February low of $11.37 a barrel.

'Startling Changes'

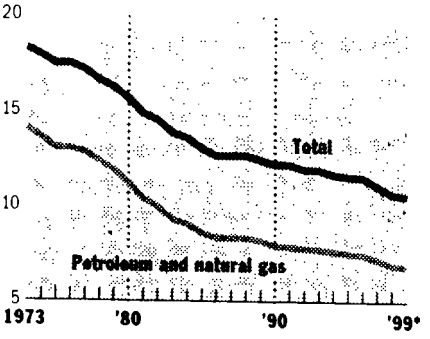
True, oil is the main reason consumer prices have risen at a 2.7% annual rate so far this year, up a full percentage point from 1998. But inflation still remains tame. In fact, last month's CPI increase was half the rate of October's and the lowest monthly rise since June.

That's because oil has become less relevant as the U.S. economy moves away from manufacturing and toward services. Fuel-gulping manufacturers accounted for only 17% of the economy in 1997, down from 22% in 1977. The decline's impact has been so pronounced that even Oil Minister Ali Naimi of Saudi Arabia, the world's biggest petroleum producer, lamented in a speech last week in Washington the "startling changes" that have reduced oil's importance to the world's industrialized economies.

Among them: U.S. oil expenditures have fallen to an estimated 3% of gross domestic product from a high of 8.5% in 1981, according to the U.S. Energy Information Administration. Suggesting that the growth of the Internet and the service sector has produced lasting changes in the economy, the U.S. in 1997 and 1998 posted its sharpest energy-efficiency gains in a decade, according to an analysis by the nonprofit Center for Energy and Climate Solutions. In both years, energy consumed per dollar of GDP fell by 4%, compared with the previous decade's average decline of less than 1% a year.

Reduced Impact

Energy consumption per dollar of gross domestic product, in thousands of BTUs



*Average of first and second quarter

Source: Energy Information Administration

Given that trend, "businesses should be spending no more time anguishing over oil prices then they do about pork bellies," says Mark Mills, senior fellow at the Competitive Enterprise Institute, a Washington think tank.

Of course, some industries still feel like they are over a barrel when oil prices climb. Hedging can't delay the pain forever, so airlines and other transportation businesses eventually feel the pinch. In recent weeks, trucking companies have begun to demand higher rates, citing higher fuel costs. And this year's oil-driven rise in the CPI will boost labor costs next year, since many wage contracts are pegged to that index.

The real test may be yet to come. If industries stock up on fuel ahead of the New Year or a lengthy cold snap grips the Northeast, some analysts think oil prices could creep above $30 a barrel – a level seen only briefly during the Gulf War. That scenario worries some economists. If prices reach that height and stay there, "economic activity slows, and the trade deficit worsens," says oil economist Phil Verleger of the Brattle Group, a consulting firm based in Cambridge, Mass. "It can be a prescription for a fairly serious and sharp recession."

So ingrained is the perceived impact of oil prices on the economy that some worry

Please Turn to Page A10, Column 1

Oil Prices Become Less Relevant

Continued From First Page

higher prices will create inflationary expectations all their own. But economists say that even at today's prices, oil and its derivatives are relatively cheap. Adjusted for inflation and excluding taxes, a gallon of gasoline is 10 cents cheaper today than it was in 1973, according to data from the American Petroleum Institute and the Energy Department.

Meanwhile, those industries that still rely heavily on oil have learned to squeeze more out of every drop. In 1981, for instance, jet fuel accounted for 29.7% of airlines' operating expenses, says the Air Transport Association. With new energy-saving technologies, such as two-engine planes with the same kick as the old three-engine versions, fuel now represents only 10% of the industry's costs.

The sport-utility vehicle craze has put more gas-hungry cars on the highways. But computer-controlled fuel injection and new transmission technologies have raised the overall efficiency of the nation's auto fleet by about 5% since 1990. The average American car was driven about 2,000 more miles last year than in 1973, but it used about 200 gallons less gasoline, the Transportation Department says.

For their part, energy-intensive manufacturers, such as LTV, have protected themselves from oil-price swings by diversifying their fuel sources. Natural gas, in particular, has become a popular alternative, because it is plentiful and relatively cheap. "Just 30 days ago, we were in the process of ramping down gas and ramping up oil," says Marty Suhoza, LTV's director of energy and metals purchasing. "Now we're doing just the opposite," he adds. "Our average fuel prices are fine."

When the first oil embargo hit in 1973, almost 17% of the nation's electricity was generated by burning more than 560 million barrels of oil. Today, with utilities deregulating and facing more competition, 3.2% of the nation's electricity is generated with the use of just 178 million barrels of oil. Coal, natural gas and nuclear power have taken up the slack.

In Silicon Valley, the heart of the New Economy, Santa Clara County added more than 150,000 jobs between 1994 and 1998 while area utilities relied almost exclusively on natural gas and renewable resources, such as hydroelectric power, to fill the new demand. California's environmental laws also resulted in a wholesale shift away from oil. The state's utilities, which burned 12 million barrels of oil in 1990, used just 103,000 barrels in 1998.

On the financial-management front, the explosion over the past five years in the number of companies using financial markets to hedge their energy costs has left the U.S. better able to absorb an oil jolt.

United Parcel Service of America Inc. has hedged nearly all its oil purchases for next year, and as a result, "we've removed ourselves from the spot market," says spokesman Norman Black. Of course, if oil prices stay where they are for the next year or so, the shipping company ultimately will face higher costs. But, "this gives us the flexibility to build our whole budget for next year with a predictable number," Mr. Black says. "That allows us to better manage our cash flow."

The oil-price jump also is coming at a time of phenomenal cost-cutting, thanks in part to the magic of the Internet. Alaska Airlines, for example, now sells 8% of its tickets via its Web site, up from 3% a year ago. Its $7.5 million-a-year savings is about half its cost of higher fuel prices.

Even if oil-dependent companies can't completely offset higher fuel costs, the odds those pressures will translate into significant inflation are much lower today than they were 10 or 20 years ago. Through the 1980s and early 1990s, "we had pass-through economics," says Gary Williams, vice president for supply-chain management for Borg-Warner Automotive Inc.'s Indiana powertrain systems division. Contracts had built-in price increases pegged to wholesale-prices rises. "Today, most contracts have fixed prices with price-downs" or built-in cuts, Mr. Williams says. So far, Borg-Warner's suppliers haven't sought higher prices to offset higher energy costs. "Companies are reluctant to be the first guy to ask for a price increase," he says.

In other industries, a capital-investment boom and competition have tempered oil's impact. With new factories slated to open next year in western Canada, an additional two billion pounds of polyethylene, a petrochemical used to make plastic bags, will be aimed at the U.S. market, a 10% increase, says Earl Simpson, a senior consultant at Pace Consultants Co. of Houston. "There's too much competition to hold prices up," he adds.

Like corporate executives, economic policy makers also have absorbed painful lessons from earlier oil shocks, and appear better poised to handle a rerun. In retrospect, most economists believe that the Federal Reserve erred in the 1970s by keeping interest rates low to make sure oil-related production cuts didn't push up unemployment. But the easy money accentuated oil's inflationary impact, leading to double-digit price increases.

Today's Fed is much more aggressive about pre-empting inflation, and today's economy gives the central bank more breathing space. With the economy growing at well above a 3% annual clip and the unemployment rate at a 29-year low of 4.1%, the Fed can afford to fight inflation by cooling growth and pushing joblessness higher. Alternatively, the Fed has ample

The politics of oil also have changed radically over the past two decades. The most powerful producers have learned that higher prices are risky, encouraging conservation efforts and new producers, who are harder to control. That may not be obvious from the current state of petro-politics. After all, the main reason oil prices have soared is that the Organization of Petroleum Exporting Countries, along with nonmembers Mexico and Norway, agreed to cut production, and compliance has been unexpectedly good. The group is hoping to make up for a glut of oil in 1996 and 1997 that sent prices tumbling as production increased and Asian demand fell.

With world inventories reduced, many expect OPEC to increase production again when the current agreement expires in March. At meetings last week with U.S. Energy Secretary Bill Richardson, Mr. Naimi of Saudi Arabia and Sheik Saud Nasser Al-Sabah assured Mr. Richardson their interest was in stable prices, not an oil crisis. That reflects an improvement in relations since 1973, when the U.S. learned in a terse cable that oil supplies to its Sixth Fleet in the Mediterranean and U.S. forces in Europe were being shut off, as the Arab nations launched their oil embargo.

As a result of all these factors, oil experts are betting on lower prices next year, even if there is another wintertime spike. While spot oil prices now trade at around $25 a barrel for January delivery, futures contracts for delivery one year from now sell for about $5 less per barrel.

Producers know there is much technology waiting in the wings to displace oil if they allow a sustained price spike. Hybrid automobiles, which use fuel cells and gasoline engines, as well as teleconferencing are just a crude crisis away from wider use, says Joseph Romm, a former assistant energy secretary and now director of the nonprofit Center for Energy and Climate Solutions.

That's why the oil industry has been undergoing its own revolution. Many oil companies are producing more natural gas. They are even joining with auto makers to develop alternative fuels and moving into the power-generation business. And, at Texaco Inc.'s Houston research facility, geologists are using a new computer-based technology to figure out the best place to drill for oil and the optimum method of extracting it.

Texaco earlier this year announced its largest discovery in 32 years, a massive field underneath about 5,000 feet of water off the coast of Nigeria. Without the greater certainty offered by the three-dimensional seismic data the new technology generates, companies could never afford to drill for crude a mile or more below the ocean's floor.

Assessing the seismic data, which once took 10 or 15 people, now takes one or two. Development planning times that took months or years now takes weeks. "The visualization technology will allow our crop yields to go up and reduce our risk," says Michael Zeitlin, a pioneer of the technology. "It's going to keep the cost of oil relatively flat and help us maintain oil prices at a level that is competitive with other energy sources."

THE WALL STREET JOURNAL.

INTERNET ADDRESS: http://wsj.com

VOL. CCXXXIV NO. 117 EE/WO ★★★ WEDNESDAY, DECEMBER 15, 1999

Blunted Spike

The Price of Oil Has Doubled This Year; So, Where's the Recession?

Petroleum Is Less Relevant In New Economy; Users Refine Hedging Skills

On a Par With 'Pork Bellies'

By Steve Liesman
And Jacob M. Schlesinger
Staff Reporters of The Wall Street Journal

Oil prices spiked to their highest level in nearly a decade last month. But when the consumer price index was released yesterday, it was up a whispery 0.1%. How is this possible? After all, this is *oil* – the stuff that helped fuel recessions in 1973, 1980 and 1990. Why aren't rising oil prices walloping the economy the way they used to?

Part of the answer can be found at LTV Corp. The Cleveland steelmaker is responding to this year's more than doubling of petroleum prices by flicking a switch. Using technology it installed over the past decade, it is shifting the fuel that fires its blast furnaces and boilers to natural gas from oil. Computer modeling lets LTV know when it's time to make the change.

Next, consider UAL Corp.'s United Airlines. The Chicago air carrier paid about the same for jet fuel in the third quarter as it did a year earlier, thanks to futures markets that let it lock in long-term prices. Good thing, too, since competition has hindered air carriers from pushing through broad-based fare increases.

Indeed, nationwide, the same forces that have propelled the U.S. economy through the 1990s – new technology, greater productivity, deregulation and sophisticated financial markets – are cushioning the blow from oil's jump to more than $25 a barrel from a February low of $11.37 a barrel.

'Startling Changes'

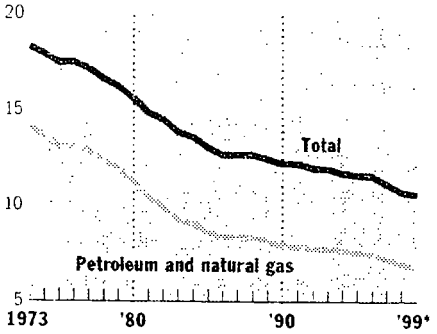
True, oil is the main reason consumer prices have risen at a 2.7% annual rate so far this year, up a full percentage point from 1998. But inflation still remains tame. In fact, last month's CPI increase was half the rate of October's and the lowest monthly rise since June.

That's because oil has become less relevant as the U.S. economy moves away from manufacturing and toward services. Fuel-gulping manufacturers accounted for only 17% of the economy in 1997, down from 22% in 1977. The decline's impact has been so pronounced that even Oil Minister Ali Naimi of Saudi Arabia, the world's biggest petroleum producer, lamented in a speech last week in Washington the "startling changes" that have reduced oil's importance to the world's industrialized economies.

Among them: U.S. oil expenditures have fallen to an estimated 3% of gross domestic product from a high of 8.5% in 1981, according to the U.S. Energy Information Administration. Suggesting that the growth of the Internet and the service sector has produced lasting changes in the economy, the U.S. in 1997 and 1998 posted its sharpest energy-efficiency gains in a decade, according to an analysis by the nonprofit Center for Energy and Climate Solutions. In both years, energy consumed per dollar of GDP fell by 4%, compared with the previous decade's average decline of less than 1% a year.

Reduced Impact

Energy consumption per dollar of gross domestic product, in thousands of BTUs



*Average of first and second quarter

Source: Energy Information Administration

Given that trend, "businesses should be spending no more time anguishing over oil prices then they do about pork bellies," says Mark Mills, senior fellow at the Competitive Enterprise Institute, a Washington think tank.

Of course, some industries still feel like they are over a barrel when oil prices climb. Hedging can't delay the pain forever, so airlines and other transportation businesses eventually feel the pinch. In recent weeks, trucking companies have begun to demand higher rates, citing higher fuel costs. And this year's oil-driven rise in the CPI will boost labor costs next year, since many wage contracts are pegged to that index.

The real test may be yet to come. If industries stock up on fuel ahead of the New Year or a lengthy cold snap grips the Northeast, some analysts think oil prices could creep above $30 a barrel – a level seen only briefly during the Gulf War. That scenario worries some economists. If prices reach that height and stay there, "economic activity slows, and the trade deficit worsens," says oil economist Phil Verleger of the Brattle Group, a consulting firm based in Cambridge, Mass. "It can be a prescription for a fairly serious and sharp recession."

So ingrained is the perceived impact of oil prices on the economy that some worry

Please Turn to Page A10, Column 1

Oil Prices Become Less Relevant

Continued From First Page

higher prices will create inflationary expectations all their own. But economists say that even at today's prices, oil and its derivatives are relatively cheap. Adjusted for inflation and excluding taxes, a gallon of gasoline is 10 cents cheaper today than it was in 1973, according to data from the American Petroleum Institute and the Energy Department.

Meanwhile, those industries that still rely heavily on oil have learned to squeeze more out of every drop. In 1981, for instance, jet fuel accounted for 29.7% of airlines' operating expenses, says the Air Transport Association. With new energy-saving technologies, such as two-engine planes with the same kick as the old three-engine versions, fuel now represents only 10% of the industry's costs.

The sport-utility vehicle craze has put more gas-hungry cars on the highways. But computer-controlled fuel injection and new transmission technologies have raised the overall efficiency of the nation's auto fleet by about 5% since 1990. The average American car was driven about 2,000 more miles last year than in 1973, but it used about 200 gallons less gasoline, the Transportation Department says.

For their part, energy-intensive manufacturers, such as LTV, have protected themselves from oil-price swings by diversifying their fuel sources. Natural gas, in particular, has become a popular alternative, because it is plentiful and relatively cheap. "Just 30 days ago, we were in the process of ramping down gas and ramping up oil," says Marty Suhoza, LTV's director of energy and metals purchasing. "Now we're doing just the opposite," he adds. "Our average fuel prices are fine."

When the first oil embargo hit in 1973, almost 17% of the nation's electricity was generated by burning more than 560 million barrels of oil. Today, with utilities deregulating and facing more competition, 3.2% of the nation's electricity is generated with the use of just 178 million barrels of oil. Coal, natural gas and nuclear power have taken up the slack.

In Silicon Valley, the heart of the New Economy, Santa Clara County added more than 150,000 jobs between 1994 and 1998 while area utilities relied almost exclusively on natural gas and renewable resources, such as hydroelectric power, to fill the new demand. California's environmental laws also resulted in a wholesale shift away from oil. The state's utilities, which burned 12 million barrels of oil in 1990, used just 103,000 barrels in 1998.

On the financial-management front, the explosion over the past five years in the number of companies using financial markets to hedge their energy costs has left the U.S. better able to absorb an oil jolt.

United Parcel Service of America Inc. has hedged nearly all its oil purchases for next year, and as a result, "we've removed ourselves from the spot market," says spokesman Norman Black. Of course, if oil prices stay where they are for the next year or so, the shipping company ultimately will face higher costs. But, "this gives us the flexibility to build our whole budget for next year with a predictable number," Mr. Black says. "That allows us to better manage our cash flow."

The oil-price jump also is coming at a time of phenomenal cost-cutting, thanks in part to the magic of the Internet. Alaska Airlines, for example, now sells 8% of its tickets via its Web site, up from 3% a year ago. Its $7.5 million-a-year savings is about half its cost of higher fuel prices.

Even if oil-dependent companies can't completely offset higher fuel costs, the odds those pressures will translate into significant inflation are much lower today than they were 10 or 20 years ago. Through the 1980s and early 1990s, "we had pass-through economics," says Gary Williams, vice president for supply-chain management for Borg-Warner Automotive Inc.'s Indiana powertrain systems division. Contracts had built-in price increases pegged to wholesale-prices rises. "Today, most contracts have fixed prices with price-downs" or built-in cuts, Mr. Williams says. So far, Borg-Warner's suppliers haven't sought higher prices to offset higher energy costs. "Companies are reluctant to be the first guy to ask for a price increase," he says.

In other industries, a capital-investment boom and competition have tempered oil's impact. With new factories slated to open next year in western Canada, an additional two billion pounds of polyethylene, a petrochemical used to make plastic bags, will be aimed at the U.S. market, a 10% increase, says Earl Simpson, a senior consultant at Pace Consultants Co. of Houston. "There's too much competition to hold prices up," he adds.

Like corporate executives, economic policy makers also have absorbed painful lessons from earlier oil shocks, and appear better poised to handle a rerun. In retrospect, most economists believe that the Federal Reserve erred in the 1970s by keeping interest rates low to make sure oil-related production cuts didn't push up unemployment. But the easy money accentuated oil's inflationary impact, leading to double-digit price increases.

Today's Fed is much more aggressive about pre-empting inflation, and today's economy gives the central bank more breathing space. With the economy growing at well above a 3% annual clip and the unemployment rate at a 29-year low of 4.1%, the Fed can afford to fight inflation by cooling growth and pushing joblessness higher. Alternatively, the Fed has ample room to let prices rise a bit.

The politics of oil also have changed radically over the past two decades. The most powerful producers have learned that higher prices are risky, encouraging conservation efforts and new producers, who are harder to control. That may not be obvious from the current state of petro-politics. After all, the main reason oil prices have soared is that the Organization of Petroleum Exporting Countries, along with nonmembers Mexico and Norway, agreed to cut production, and compliance has been unexpectedly good. The group is hoping to make up for a glut of oil in 1996 and 1997 that sent prices tumbling as production increased and Asian demand fell.

With world inventories reduced, many expect OPEC to increase production again when the current agreement expires in March. At meetings last week with U.S. Energy Secretary Bill Richardson, Mr. Naimi of Saudi Arabia and Sheik Saud Nasser Al-Sabah assured Mr. Richardson their interest was in stable prices, not an oil crisis. That reflects an improvement in relations since 1973, when the U.S. learned in a terse cable that oil supplies to its Sixth Fleet in the Mediterranean and U.S. forces in Europe were being shut off, as the Arab nations launched their oil embargo.

As a result of all these factors, oil experts are betting on lower prices next year, even if there is another wintertime spike. While spot oil prices now trade at around $25 a barrel for January delivery, futures contracts for delivery one year from now sell for about $5 less per barrel.

Producers know there is much technology waiting in the wings to displace oil if they allow a sustained price spike. Hybrid automobiles, which use fuel cells and gasoline engines, as well as teleconferencing are just a crude crisis away from wider use, says Joseph Romm, a former assistant energy secretary and now director of the nonprofit Center for Energy and Climate Solutions.

That's why the oil industry has been undergoing its own revolution. Many oil companies are producing more natural gas. They are even joining with auto makers to develop alternative fuels and moving into the power-generation business. And, at Texaco Inc.'s Houston research facility, geologists are using a new computer-based technology to figure out the best place to drill for oil and the optimum method of extracting it.

Texaco earlier this year announced its largest discovery in 32 years, a massive field underneath about 5,000 feet of water off the coast of Nigeria. Without the greater certainty offered by the three-dimensional seismic data the new technology generates, companies could never afford to drill for crude a mile or more below the ocean's floor.

Assessing the seismic data, which once took 10 or 15 people, now takes one or two. Development planning times that took months or years now takes weeks. "The visualization technology will allow our crop yields to go up and reduce our risk," says Michael Zeitlin, a pioneer of the technology. "It's going to keep the cost of oil relatively flat and help us maintain oil prices at a level that is competitive with other energy sources."

December 20, 1999

Long Term Appears Turbulent for Oil

By KENNETH N. GILPIN

Of all the pressures on the oil industry as the century turns, the one most likely to transform it over the next two decades, industry experts say, will be the fervent campaign to improve the environment.

"If we go 20 years forward, the oil industry at the turn of the 21st century will look like a very antiquated business because the types and use of petroleum products will change dramatically," said Philip K. Verleger Jr., a senior adviser to the Brattle Group, an economic consulting firm based in Cambridge, Mass.

"There is going to be a lot of capital that is going to be made obsolete almost immediately," he said.

Much as it has for the last 100 years, however, oil will dominate the fuel industry as the 21st century begins. Even for the next decade or so the effects of recent underlying trends are likely to be incremental rather than seismic.

"There is nothing surprising out there over the medium term," said Lawrence Goldstein, president of the Petroleum Industry Research Foundation in New York. "The trends that have been driving and will continue to drive the industry are already in place: consolidation, cost consciousness and technology."

From a public policy perspective, however, "environmental issues will be paramount," he said.

THE ECONOMY AND INDUSTRY

Outlook 2000
Home Page

In This Section
A Time of Energy and Enterprise and and Now E-Everything
'There Must Be a Better Way,' They Say
As Labor Pool Shrinks, a New Supply Is Tapped
Engineering the Nation's Longest Expansion
As Nature of Money Changes, Will the Dollar Remain Supreme?
In the Works: Drugs Tailored to Individual Patients
Rocky Outlook for Genetically Engineered Crops
Health Care Consumers Can Expect Change, and a Shock or Two
Auto Dealers Streamline Operations to Meet the Challenge of the Internet
The Airline Industry May Get a Little Smaller So It Can Get Bigger
Long Term Appears Turbulent for Oil
The A.T.M. Prophet Is a Late Convert to the Internet
Goodbye Cold Calling; Hello Cross-Selling
The Real Retail Revolution: It's Wal-Mart, Not the Net
For Hotels, Quiet Bells and Whistles
Poor Judgment, Bad Breaks, Big Blunders
The Real Retail Revolution: It's Wal-Mart, Not the Net

And in the longer term, conforming with stricter environmental guidelines will transform the oil industry.

Structural changes are already occurring. Driven by the need to cut costs, 1999 brought the consolidation of four huge companies into two even bigger ones: Amoco's merger with British Petroleum and the combination of Exxon and Mobil. A consolidation wave in the oil services business has been less heralded, but in many respects has been even more sweeping. Among the combinations are Halliburton's takeover of Dresser Industries, Baker Hughes's purchase of Western Atlas, and EVI's purchase of Weatherford Enterra.

A glimpse of the future will be on view next year when Toyota and Honda roll out so-called hybrid automobiles -- cars that combine batteries and electric motors with gasoline or diesel engines. These clean, peppy models can go twice as far as a conventional car on a gallon of gasoline, although analysts say drivers may not rush to buy

any new technology until they are sure it works well.

Also on the drawing boards are vehicles powered by a fuel cell and batteries instead of an engine and batteries. Fuel cells combine hydrogen and oxygen to form electric current and water, with high efficiency and no pollution. Even if oil prices do not rise, movement toward the fuel cell cars is virtually inevitable, the experts said, although this technology is still being developed and is not expected to take hold until sometime in the second decade.

"U.S. energy policy today is an environmental policy: cleaner fuels and substitution away from conventional oil moving slowly, inevitably toward alternative fuels," Mr. Goldstein said.

Even as they roll out more and more gas-guzzling, high-profit-margin sport utility vehicles, automobile manufacturers have apparently heard the message.

"I don't talk to anyone in the auto industry who doesn't think that fuel cells are the likely fuel-propulsion mechanism in the future," said Paul R. Portney, president of Resources of the Future in Washington. "Whether it is powered by methanol, hydrogen or something else is up in the air, but 20 years from now fuel cells will begin to propel more and more cars. In the interim, you will see hybrid cars."

For now, however, the internal combustion engine will continue to rule. And while it is possible that an oil shortage may develop this winter, experts said that oil would remain plentiful over the longer term.

The doubling in oil prices over the last year has been painful to the pocketbook, but experts point out that it was unrealistic to assume that oil, which cost $13 a barrel or less in 1998, would stay at those lower levels for long.

"We are going to get large chunks of new supply over the next five years," Mr. Verleger said, "particularly if OPEC keeps prices up. It will primarily come out of the sea, like the Caspian oil field."

OPEC, the cartel that controlled oil prices and had a profound influence on the world economy in the 1970's, lost most of its teeth in the 1980's and well into the 1990's. Alternative sources of supply and a global economy that is less dependent on petroleum have curbed its power.

But this year OPEC managed to regain some of its old dominance by adopting -- and adhering -- to a set of strict production quotas during a time of rising demand.

The cartel's re-emergence as a major force, however, is likely to be short-lived.

"Oil prices will remain volatile because no ruling group is in charge," said M. A. Adelman, professor emeritus of economics at the Massachusetts Institute of Technology.

"Conditions are a lot more competitive than they used to be, and the price is a lot lower. That will continue for some time."

Competition is coming largely from sources of new supply that have been made possible by technological improvements over the last decade.

Exploration in some previously unreachable places is now economically viable.

Over the last few years, three technological advances have been particularly important: 3-D seismic exploration techniques, which allow ships trawling over the ocean to locate reserves more precisely; the development of deep-water platforms that allow for exploration at much greater depths, and directional drilling, which slants drill bits out like legs on a mosquito as far as 5 or 10 miles, greatly expanding the territory that can be explored from a single ocean-based platform.

"These technologies, which are being fine-tuned to make them more versatile in various parts of the world, allow for much faster exploration and delivery," said James L. Smith, a professor of economics at the Cox School of Business of Southern Methodist University in Dallas.

As an example, Mr. Smith said that new wells in the North Sea could be in production within 18 months to two years from first discovery. Not so long ago, that same process would have taken as much as seven years, he said.

Although OPEC nations sit on vast proven reserves of oil, the rise in recoverable reserves elsewhere has all but silenced the voices that a quarter-century ago were saying that the world would soon run out of oil.

"There is no chance we will run out of oil in the next 20 years," Mr. Portney, from Resources of the Future, said. "We will stop using oil long before we run out of it. A century from now, when we don't use oil for very much, there will be a ton of it around."

Home | **Site Index** | **Site Search** | **Forums** | **Archives** | **Marketplace**

Quick News | Page One Plus | International | National/N.Y. | Business | Technology | Science | Sports | Weather | Editorial | Op-Ed | Arts | Automobiles | Books | Diversions | Job Market | Real Estate | Travel

Help/Feedback | Classifieds | Services | New York Today

The Washington Post

APR 3 0 1998

Circ: 852,262

Shareholders Defy Exxon Over Global Warming Measure

By Martha M. Hamilton
Washington Post Staff Writer

02

Things may have gotten uncomfortably warm for Exxon's corporate leadership at the company's annual shareholders meeting yesterday.

More than 4 percent of Exxon shareholders voted against the oil company and in favor of a resolution aimed at requiring Exxon to take stock of the impact of global warming on its policies and operations.

That was a large enough margin—more than the 3 percent minimum required by Securities and Exchange Commission rules—to ensure that supporters will be able to bring up again next year a measure that Exxon tried to keep off the ballot this year.

The company had sought help from the SEC to prevent the Interfaith Center on Corporate Responsibility from posing its resolution to shareholders at yesterday's annual meeting in Dallas. Exxon argued unsuccessfully that the statement by proponents in support of the resolution was contrary to a rule that prohibits false and misleading statements in proxy statements.

During last year's proxy season, the SEC had about 60 requests from companies to bar shareholder proposals on such grounds and rejected about half of them.

Among other defects, the company said that the shareholder statement "implies a scientific certainty on climate change which, in fact, does not exist" and that it misstated chief executive Lee R. Raymond's remarks to the 15th World Congress in Beijing in which he raised questions about whether global warming exists and, if it does, whether burning fossil fuels contributes to it.

Paul M. Neuhauser, an Illinois attorney who represented three religious orders that hold stock in Exxon and that supported the shareholder resolution, said he differed with the company's questioning of whether a global climate change is occurring.

"We start with the premise that the whole world is not crazy," he wrote, noting that in December "virtually every nation in the world (168 nations) signed a treaty in Kyoto aimed at reducing greenhouse gases in order to slow global warming."

The resolution, which also will be voted on next month at annual meetings of General Motors Corp. and Ford Motor Co. shareholders, would have required Exxon to create a committee of outside directors to independently review the impact of climate change on Exxon's policies and practices. The proposal sought to have Exxon weigh issues such as potential liability, and to work toward reducing greenhouse gas emissions.

Exxon urged shareholders to vote against it, saying the committee would be an "unwarranted duplication of effort" and that the basis for the proposal was "erroneous." The company is taking measures to reduce its energy consumption, it told shareholders.

According to Exxon, the vote was 4.6 percent in favor of the resolution (which must get more than 6 percent of the vote next year to stay alive) and 95.4 percent against. But Kymberly Escobar, a spokeswoman for the environmental group Ozone Action, said the sponsors of the proposal had been told that 3 percent of shareholders abstained, reducing the vote against to 92.4 percent.

The Washington Post

D2 Thursday, April 30, 1998

Shareholders Defy Exxon Over Global Warming Measure

By Martha M. Hamilton
Washington Post Staff Writer

Things may have gotten uncomfortably warm for Exxon's corporate leadership at the company's annual shareholders meeting yesterday.

More than 4 percent of Exxon shareholders voted against the oil company and in favor of a resolution aimed at requiring Exxon to take stock of the impact of global warming on its policies and operations.

That was a large enough margin—more than the 3 percent minimum required by Securities and Exchange Commission rules—to ensure that supporters will be able to bring up again next year a measure that Exxon tried to keep off the ballot this year.

The company had sought help from the SEC to prevent the Interfaith Center on Corporate Responsibility from posing its resolution to shareholders at yesterday's annual meeting in Dallas. Exxon argued unsuccessfully that the statement by proponents in support of the resolution was contrary to a rule that prohibits false and misleading statements in proxy statements.

During last year's proxy season, the SEC had about 60 requests from companies to bar shareholder proposals on such grounds and rejected about half of them.

Among other defects, the company said that the shareholder statement "implies a scientific certainty on climate change which, in fact, does not exist" and that it misstated chief executive Lee R. Raymond's remarks to the 15th World Congress in Beijing in which he raised questions about whether global warming exists and, if it does, whether burning fossil fuels contributes to it.

Paul M. Neuhauser, an Illinois attorney who represented three religious orders that hold stock in Exxon and that supported the shareholder resolution, said he differed with the company's questioning of whether a global climate change is occurring.

"We start with the premise that the whole world is not crazy," he wrote, noting that in December "virtually every nation in the world (168 nations) signed a treaty in Kyoto aimed at reducing greenhouse gases in order to slow global warming."

The resolution, which also will be voted on next month at annual meetings of General Motors Corp. and Ford Motor Co. shareholders, would have required Exxon to create a committee of outside directors to independently review the impact of climate change on Exxon's policies and practices. The proposal sought to have Exxon weigh issues such as potential liability, and to work toward reducing greenhouse gas emissions.

Exxon urged shareholders to vote against it, saying the committee would be an "unwarranted duplication of effort" and that the basis for the proposal was "erroneous." The company is taking measures to reduce its energy consumption, it told shareholders.

According to Exxon, the vote was 4.6 percent in favor of the resolution (which must get more than 6 percent of the vote next year to stay alive) and 95.4 percent against. But Kymberly Escobar, a spokeswoman for the environmental group Ozone Action, said the sponsors of the proposal had been told that 3 percent of shareholders abstained, reducing the vote against to 92.4 percent.

The Washington Post

Circ: 852,262

APR 22 1998

Shell Leaves Coalition That Opposes Global Warming Treaty

By Martha M. Hamilton
Washington Post Staff Writer C13

Royal Dutch/Shell Group yesterday dealt a blow to oil industry efforts to fight the Kyoto Treaty by withdrawing from a coalition of oil companies, automakers, electric utilities and others opposed to the treaty's terms for reducing global warming.

Mark Moody-Stuart, who becomes chief executive of Shell on July 1, said in London that the world's largest publicly traded oil company had decided not to renew its membership in the Global Climate Coalition at the end of this year because of a fundamental difference of opinion. Shell supports ratification of the treaty, which would restrain increases in fossil fuel emissions that have been blamed for global warming.

The move by Shell comes at a time when a growing number of major oil company executives have begun focusing on how to reduce emissions of greenhouse gases rather than debating whether fossil fuels are changing the world's climate. It also underscores the differences between companies based in the United States and their counterparts based in Europe, where more of a consensus exists over the need to reduce greenhouse gas emissions.

Shell had come under criticism in the past for its membership in the coalition, but as recently as February, Moody-Stuart had said the company would remain to take part in the debate there. Last week, however, after a meeting with the coalition leadership, the company decided to call it quits.

Gail McDonald, president of the coalition, said she met with Shell officials last week when they came in to discuss the coalition's strategic plan. "Since they support ratification, they felt we had a serious divergence of views, which we did," she said.

"We're disappointed," she said. "We always hate to lose a member, but we certainly understand it if they differ from us on a major issue." McDonald said the coalition also has lost the Association of International Automobile Manufacturers as a member but has added others to its rolls in recent months.

"This is a real-world example of another company turning a potential threat into a market opportunity," said Michael Marvin of the Business Council for Sustainable Energy, whose members include natural gas marketers and other companies that may benefit from the move to reduce greenhouse gas emissions. "Coming from a fossil-fuel business, Shell's message goes beyond the oil industry. It goes to all of the traditional industries in saying, 'Let's figure out how to deal with this.'"

Shell's statement about the coalition was made during a news conference releasing a report assessing the company's financial, environmental and social performance. The report was prompted in part by criticism the company has encountered for its operations in Nigeria, where the government has jailed and executed political opponents, as well as a decision several years ago, which was later rescinded, to dump the Brent Spar offshore oil platform at sea.

Among other things, the report noted that Shell fired 23 employees last year for soliciting or accepting bribes and spent $32 million on community projects in Nigeria.

Energy Daily

25 Years of Excellence in Reporting

627 National Press Building • Washington, D.C. 20045 • (202) 638-4260 • Fax: (202) 662-9744

Monday, October 19, 1998

ED Volume 26, Number 198

Senators Propose Credits For Early Greenhouse Cuts

BY GEORGE LOBSENZ

In a low-key but potentially pivotal global warming initiative, bipartisan legislation has been introduced in the Senate to formally credit companies for voluntary early action to reduce their greenhouse gas emissions before 2008.

The bill would for the first time provide U.S. government recognition for carbon dioxide cuts in the form of emission reduction credits that would be usable by companies in any international or domestic emission trading system that may be established.

In offering those credits, the measure would establish the first clear financial incentive for U.S. companies to cut their greenhouse gas discharges. It also is in line with administration policies aimed at developing emission trading strategies to reduce the cost of addressing global warming.

The bill, quietly unveiled Oct. 10, is sponsored by Sens. John Chafee (R-R.I), chairman of the Senate Environment and Public Works Committee, Sen. Joseph Biden (D-Conn.), a close ally of the Clinton administration on environmental matters, and Sen. Connie Mack (R-Fla.), a self-avowed global warming skeptic.

In perhaps the most interesting remarks on the Senate floor about the bill, Mack said that the legislation deserved support even from those lawmakers dubious about global warming.

"Given the uncertainty that surrounds the discussion of greenhouse gases and global warming, I can understand why some may question the need for such a bill," he said. "As one who is not convinced that we understand this issue well enough, I can understand that question. In fact, it is precisely because of the uncertainty

(Continued on page 4)

NRC Staff Proposes Yucca Mountain Safety Standards

BY JENNIFER BARSKY

The Nuclear Regulatory Commission staff last week released its recommendations for draft regulations governing disposal of high-level radioactive waste at the planned Yucca Mountain, Nev., repository.

The staff proposed an annual dose limit of 25 millirem for potentially exposed humans over the 10,000 years following emplacement of the wastes in the underground repository, which is being developed by the Energy Department.

NRC officials noted the Environmental Protection Agency had final authority under current law to set Yucca Mountain standards. NRC is required by law to enforce those standards through licensing regulations for the repository.

NRC said it released its recommendations in order to give DOE and stakeholders a head start in evaluating the potential licensing regulations.

The staff recommendations also appear designed to provide alternatives to EPA standards, which have not been proposed but which DOE and NRC officials fear may be unrealistically stringent, especially in regard to groundwater protection.

A Nuclear Energy Institute spokesman said that with EPA two years behind on releasing its standards, NRC decided it wouldn't wait.

"Until EPA comes out with its own standards, NRC will rely on its own

(Continued on page 2)

Sharp Sounds Optimistic Note On Deregulation Bill Outlook

BY HOWARD BUSKIRK

With questions already arising about potential political roadblocks looming in the future, former U.S. Rep. Philip Sharp said Friday he is growing increasingly optimistic the 106th Congress will pass a comprehensive electricity restructuring bill.

"We're a long way from the next congressional session and who knows what the political landscape will be then, but I'm a little more optimistic [than some] that you may see legislation in the next Congress," said Sharp following a speech to the Electricity Consumers Research Council meeting in Washington.

Asked why he is optimistic, the Indiana Democrat and top expert on energy issues replied his confidence is based on years of watching Congress at work.

"It's just the way you watch forces behave," he said. "They slowly realize they can't win all that they want. When they do that, they begin to accept what they can get.

"We know now, for example, that Congress is not going to define the rules for stranded costs under any legislative proposal," Sharp said. "Two years ago, that was what everybody was arguing about. How is Congress

(Continued on page 2)

Yucca Mountain...

(Continued from page one)

judgment and that judgment will be set on precedents in NRC's other rules on radiation exposure," the spokesman said.

In general, DOE officials said there were no show-stoppers in the NRC recommendations and they were largely in line with DOE's expectations.

"On the whole the recommendations were reasonable," said Steve Brocoun, DOE's assistant manager for licensing and regulatory compliance. "But DOE will complete a very comprehensive study of the recommendations....As you know, the devil is in the details."

Specifically, Barocoun said DOE will have a lot of questions regarding design basis events, such as accident scenarios, and how NRC expects to evaluate these events.

Lake Barrett, acting director of DOE's Office of Civilian Radioactive Waste, said NRC was heading in the right direction. "It is a tough standard and it is not going to be easy to meet, but it is fair," he said.

While the NRC recommendations are an important step in the overall process, one DOE official said it is the awaited release of Yucca Mountain standards by EPA that has DOE holding its breath, especially the possible groundwater standard.

NRC officials said they did not see the need to set separate standards for groundwater or other individual radiation release pathways. They said the overall 25 millirems standard would sufficiently "ensure protection of public health and safety and [provide] appropriate flexibility to DOE for demonstrating compliance."

However, Steve Frishman, technical policy coordinator for the State of Nevada's Nuclear Waste Project Office, said his agency will contest NRC's decision not to include a separate groundwater standard. "Without these standards, NRC would not afford Nevada residents the same protection everyone else gets," he said.

The commission is currently evaluating the staff recommendations and is expected to vote on them by the beginning of November.

Deregulation Bill Outlook...

(Continued from page one)

going to define this if they do? I think it's a forgone conclusion that they're going to leave this to the states."

He added, "There will be a statement about how we're all for collecting stranded costs that are justified and prudent and God given, but we're not going to tell you how to do it."

Sharp also said he doubts the legislation will contain a date certain—another tough issue for Congress to work through.

"To the extent that Congress comes up with a mandate I expect the administration has found the most likely political formula [in its proposed legislation], if any political formula is acceptable," he said. "It allows opting out by states, which is not quite as aggressive and some would argue may hold up to constitutional challenge better."

Sharp, currently a lecturer at the Kennedy School of Government at Harvard University, had a reputation as a savvy political operator when he chaired the House Energy and Commerce Committee's energy and power panel

During his speech to the Elcon meeting he for the most part discussed the recent report by the Energy Department task force he chaired on electricity reliability. That report, "Maintaining Reliability in a Competitive U.S. Electricity Industry," is now on the DOE website, but has yet to be published.

The report essentially urges Congress and regulators to move as quickly as possible to full-scale competition to preserve the reliability of the electricity system.

Among its conclusions:

- Reliability standards must be clear, transparent, nondiscriminatory, enforceable, and enforced. Compliance must be mandatory for all entities using the bulk-power system.
- Regulatory oversight is necessary to ensure compliance with reliability policies and standards and to resolve disputes.
- Independent system operators are significant institutions to ensure both electric system reliability and competitive generation markets.

Sharp called last June's price spikes in the Midwest "unsettling," but not a reason to slow the transition to competition.

"People were scrambling to buy power and couldn't get it," he said. "A few traders and others went out of business...but essentially reliability was maintained."

And Sharp said he sees signs that many of the task force's recommendations to assure system reliability will eventually be put into place.

For example, the task force recommended modifying the governance structures of the reliability councils under the North American Electric Reliability Council and undertaking a federal review of the council's existing policies and organizational structure. "Almost all of [the changes] are underway," Sharp said. "NERC is on its own transforming itself and we applaud that. The administration adopted our legislative proposals.

"FERC has already begun to move [on reliability]," he added. "At first, they were naturally very concerned that this has not been an area that they had been involved in and they were reluctant to move...but they have found themselves inevitably drawn into it."

Sharp also predicted that whatever comprehensive electricity legislation eventually clears Congress will contain a chapter on reliability. "There's more and more talk that reliability will be one of the issues that drives the thing rather than a tail on the thing," he said.

THE ENERGY DAILY

Llewellyn King, Publisher.
PUBLISHED MONDAY THROUGH FRIDAY. (ISSN: 0364-5274).
SUBSCRIPTION PRICE: $1,575 PER YEAR. FAX PRICE: $1,775 PER YEAR.
CIRCULATION/CUSTOMER SERVICE: Sabrina Ousmaal (202) 662-9724.

Cheeky Ads Tweak Congress On Electricity Deregulation

New Energy Ventures is no shrinking violet.

That much is clear from a series of sassy newspaper ads which the independent energy service provider is now running to urge Washington and state policymakers to get moving on electricity deregulation.

The ads, which began appearing in major newspapers last week, tweak Congress for focusing on the Monica Lewinsky scandal while doing little to open the nation's electricity markets to competition, which the company says would generate huge cost savings for consumers.

And one of the biggest winners would be the federal government, said the Los Angeles-based company. It noted it already has been named energy provider for Defense Department facilities in California, which has deregulated its market. But it said government facilities could not go shopping for lower-priced power in many other states because their markets still were closed.

To Members of the House,

If you have the time to read a 3,000 page report on the President's sex life, surely you can spare a few minutes to save the American taxpayers billions of dollars.

"Once we get past the temporary hurdle of paying off utilities for the high-priced investments they made in power plants—the so-called stranded debt problem—competition will reduce electricity prices at least 25 percent nationally and as much as 40 percent in some states," said Michael Peevey, president and chief executive officer of New Energy Ventures.

President Clinton,

A sweeping change of power on the Senate floor and in the House of Represenatives will save a lot more than your butt.

"For the federal government alone, that could mean annual electric energy cost savings of at least $870 million."

And he said the U.S. economy as a whole could realize savings of $55 billion a year, assuming a 25 percent drop in electricity prices.

"To make such savings possible, we need to accelerate the introduction of competition," Peevey said. "We urge legislators and regulators in states that are moving slowly to speed up the process. We also urge Congress and the president to make energy deregulation a high priority for legislative action."

New Energy Ventures is jointly owned by UniSource Energy Corp. and New Energy Holdings, Inc.

Duke Energy Sells Oil Unit

Duke Energy Corp. has cleared up the mystery behind its failed deal to buy Dynegy's crude oil business.

Only a few days after Dynegy announced its deal was off with Duke, Duke Energy announced Friday it was selling its crude oil operation, Duke Energy Transport and Trading Company (DETTCO), to TEPPCO Partners for TEPPCO limited partnership units.

Duke Energy will receive TEPPCO Class B limited partnership units, further linking the success of Duke Energy and TEPPCO. Duke Energy is the general partner of TEPPCO. The Class B units will represent approximately 12 percent of the outstanding limited partnership interest in TEPPCO, which will increase Duke Energy's overall limited partnership interest in TEPPCO to approximately 20 percent.

DETTCO, based in Oklahoma City, gathers, stores, transports and markets crude oil principally in Oklahoma and Texas, operates two trunkline natural gas liquids (NGL) pipelines in South Texas and distributes lubricating oil to industrial and commercial accounts through Lubrication Services, Inc. (LSI).

Jim Mogg, president of Duke Energy Field Services Inc., the parent company of DETTCO, said Duke Energy remained committed to the crude oil and NGL pipeline businesses and believed the sale to TEPPCO was the best way to pursue those interests. "Duke Energy believes that the best vehicle to participate in the current consolidation of these segments of the industry is the master limited partnership (MLP)," he said. "Because TEPPCO is an existing MLP, the logical choice for Duke Energy is to utilize TEPPCO as one of the industry's consolidators."

William Thacker, chairman, president and chief executive officer of TEPPCO, said the acquisition was "the first step in our entry into the crude oil gathering, transportation, storage and marketing business. It will provide us with the necessary infrastructure and personnel to grow this part of our business, and we foresee a number of opportunities to expand our presence."

TEPPCO Partners, L.P. is a publicly owned master limited partnership. TE Products Pipeline Company, Limited Partnership, the operating partnership, is one of one of the largest common carrier pipelines of refined petroleum products and liquefied petroleum gases in the United States. Duke Energy is a global energy company with more than $24 billion in assets.

New German Leaders Announce Nuclear Shutdown

The two leading parties in Germany's future coalition government said last week they would shut down nuclear power stations to make atomic energy a thing of the past, but would hold talks with industry before setting a deadline.

The Social Democrats (SPD) and the environmentalist Greens said they had reached a deal in talks on forming a new government that would give the industry a year to help work out a shutdown plan.

If the industry fails to comply, Chancellor-elect Gerhard Schroeder's planned coalition government will legislate anyway, said Juergen Trittin of the Greens, who is expected to serve as the next environment minister.

"At latest a year after the new government takes office, the coalition will set a legal limit for the life of nuclear power stations, either with or without consensus with the energy companies," he told reporters in Bonn Thursday. Generating companies reacted negatively, saying the move would cost jobs, burden the economy and lead to more carbon dioxide pollution. Environmental campaigners welcomed the news but expressed dismay that no date had been fixed for an end to atomic power, which provides a third of Germany's electricity from 19 plants.

Schroeder has said it could take up to 30 years before the last reactor is shut down for good. The Greens had campaigned for a five-year limit, stepping up their demands after the 1986 Chernobyl disaster.

Utility group Viag AG on Wednesday rejected a Greens plan to shut down nuclear plants after 20 years in service. That would close 10 of them within a year.

"We could justify a lifetime of 35 to 40 years to shareholders. Anything less would be a pure destruction of capital and would be indefensible economically," Viag Chief Executive Wilhelm Simson said in a newspaper article.

Energy companies might take the government to court if it cancels operating licenses. Experts say they could seek hundreds of millions of marks in compensation.

RWE Energie said it was ready to talk but the chances of an energy consensus with the new government would be hurt by any preconditions calling for an end to nuclear power.

Siemens AG said abandoning nuclear power would force increased use of coal, oil and natural gas that would increase carbon dioxide emissions by 160 million tons. It said it was wishful thinking to imagine Germany could cut its energy use by the third that nuclear reactors provide.

Trittin said a first new law on nuclear energy would be passed within the first 100 days of the new government, which is set to take over officially from outgoing Chancellor Helmut Kohl by the end of October. It would state the goal of ending nuclear power, ban new nuclear plants and also bar reprocessing of spent nuclear fuel, much of which is currently sent to Sellafield in Britain.

—REUTER

Greenhouse Cuts... (From one)

that I think such a bill makes sense.

"The complexities and uncertainties associated with trying to understand the vast interactions of our climate, our atmosphere and our human impact on both, are enormous. And the consequences of actions targeted at changing our patterns of energy use can be dramatic.

"But uncertainty cuts two ways, and the possibility always exists that some of these projections about impacts could be more right than wrong," Mack said. "Perhaps then it makes sense to provide some appropriate encouragement so that those who want to invest in improved efficiency...[T]hose companies can receive some encouragement not based on government fiat or handout, but based on getting credit for their own initiative and actions. The environmental result will likely be some lessening of the potential problems associated with possible global warming, and that just makes sense."

Chafee said many major companies had come to the same conclusion as Mack, and noted that a recent industry-backed report released by the Pew Center on Climate Change, a Washington think tank, recommended an early credit program as one of the most important things Congress could do on global warming.

Chafee also emphasized that, whatever the outcome of the global warming debate, the bill was an important insurance policy for companies that take costly but environmentally responsible steps to reduce their greenhouse gas emissions.

"Under a 'no credit' approach, the status quo, it is more likely that early reduction companies will be penalized if greenhouse gas reductions are ultimately required, because their competitors who wait to reduce will get credit for later reductions," he said. "Such a 'no credit' approach could even create perverse incentives to delay investments until emissions reductions would be credited."

And from an international perspective, Chafee said, "passage by the U.S. Congress of a program to stimulate early action will be a clear example of American leadership and responsibility."

Lieberman noted the bill built on earlier legislation under which companies can voluntarily record their greenhouse gas emission reductions with the Energy Department. He also said the bill had support from environmentalists and was based on principles developed by the Environmental Defense Fund and several major industry groups.

Chief Nuclear Officer Named At Millstone

Northeast Nuclear Energy Company said Wednesday that Leon Olivier has been named senior vice president and chief nuclear officer for its Millstone plant, effective October 18.

Olivier joins Northeast Nuclear after 29 years with Boston Edison. Most recently, he served as senior vice president, nuclear, for Boston Edison, responsible for operation of the Pilgrim Station nuclear facility in Plymouth, Mass.

Northeast Nuclear Energy Company is a subsidiary of Northeast Utilities System, an electric utility holding company that serves about 1.7 million customers through its operating subsidiaries in Connecticut, western Massachusetts and New Hampshire.

Business

The New York Times ON THE WEB

Home | Site Index | Site Search | Forums | Archives | Marketplace

essential

October 22, 1998

POWER HUNGRY: A SPECIAL REPORT

U.S. Splurging on Energy After Falling Off Its Diet

Related Article

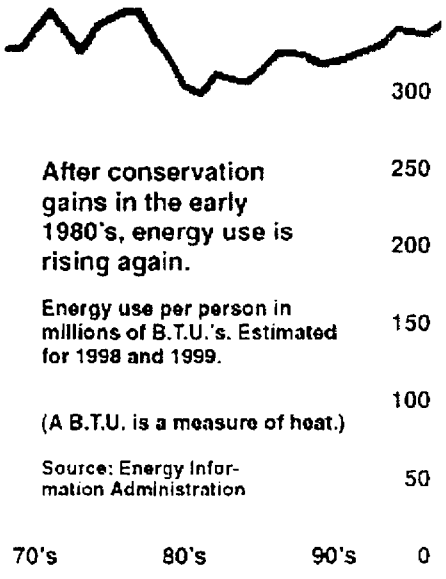
- Large Penalty Likely Against Diesel-Engine Makers

By ALLEN R. MYERSON

ARVADA, Colo. -- Twenty-five years after an oil embargo proved that fuel supplies were neither reliable nor endlessly cheap, the United States has given up almost all the gains it made in conserving energy. On average, Americans have returned to consuming nearly as much energy as ever before.

From 1973, when Arab oil producers choked off their shipments to the United States, through 1983, the nation reduced its energy consumption even as the population and economy expanded. Prodded by higher costs and led on conservation crusades by Presidents Richard M. Nixon, Gerald R. Ford and Jimmy Carter, Americans learned to do more with less.

That effort is still yielding great benefits. Owners of older buildings and homes installed thicker insulation and tighter windows. As technology improved, every new home, factory and car came with far more efficient appliances, machines and engines than in the 1970's. But energy demand has risen so much since the mid-1980's that, next year, the Energy Department predicts, consumption per person will come to within 2 percent of the peak in 1973, before any of these energy-saving advances had begun. Declining energy prices -- now lower in real terms than before the first embargo -- have made the difference. In the dollar-a-gallon era, why spend much time or money saving a gallon or a watt?



POWER HUNGRY: A TIMELINE

1973
The Arab oil embargo, begun during the Yom Kippur War, demonstrates OPEC's power. A new era of scarcity, favoring oil producers, begins. Oil prices eventually quadruple.

1975
To conserve energy, Congress approves fuel efficiency standards and a speed limit of 55 miles an hour.

1979-80
The revolution in Iran and then its war with Iraq send the prices of oil up drastically.

1986
OPEC's production quotas fail in the face of weak demand. Oil exporters flood the market and prices collapse. The oil industry begins a sharp contraction. But lower prices encourage greater consumption.

1990-1991
The Persian Gulf war begins with Iraq's invasion of Kuwait, a threat to Saudi Arabia as well. Oil prices jump, contributing to a global recession.

1997-98
The world economic crisis reduces demand for oil. Prices, adjusted for inflation, have fallen this year to 25-year lows.

Evidence of the more energy-intensive life style is everywhere. Since the early 1970's, as the average household has shrunk by a sixth, the average new home has grown by a third. Even moderately priced homes are now stuffed with energy-hungry features, from central air-conditioning to Jacuzzis and security systems.

Look at families like T. C. and Michael McCracken and their year-old daughter, Lydia. The McCrackens, avid hikers, are far more willing than most Americans to shop for energy-saving appliances or ride the bus to work. But here in Arvada, outside Denver, standard features of their nearly completed tract home include ceilings so high that overhead fans, finding a new season and purpose, are required in winter to blow rising heat back down. With 2,600 square feet to fill, McCracken plans to install a home office, a home theater and a home brewery fed by its own gas line. What Mrs. McCracken calls a "killer kitchen" has all the standard appliances and the electrical capacity for more than a dozen others, plus room to seat a family of 10.

Energy use is rising even faster on the roads. Next year, Americans are expected to burn more fuel per person than in 1973, before the Government set mileage standards. More families have two earners, and the suburbs continue to sprawl, so Americans are driving more than ever. As for fuel economy, the growing popularity of light trucks -- minivans, sport utility vehicles and pickup trucks -- has begun to reverse two decades of gains.

The daily hour to hour and a half that Mrs. McCracken, a personnel manager,

has spent commuting and running errands in her Dodge Caravan minivan will stretch by another half-hour once she moves. And McCracken will put more miles on his sport utility vehicle, an Isuzu Rodeo.

Corporate habits are going the same way. Businesses saved more energy than individuals did through the mid-1980's but have used the most extra energy ever since. Chemical producers, among the heaviest energy users, say that in the 1990's they have all but quit making improvements solely to save energy. Electric utilities are cutting reimbursements for installing more efficient heating, cooling, lighting and other equipment at work and at home.

Cheap, abundant energy has in fact produced great benefits, fueling an era of rising standards of living and dormant inflation. Lower demand from Asia has pushed oil prices down even further lately, with shortages unlikely for years.

Growing energy demand is a natural result. But it conflicts with the nation's declared goals of reducing dependence on imported oil and lowering carbon dioxide emissions, thought to cause global warming. It also requires the nation and its oil companies to spend billions of dollars laying pipelines through unstable regions, building drilling platforms in deep seas and defending foreign supplies.

Clearly, the nation relies more than ever on overseas oil. Imports account for a record 50 percent of consumption, up from 35 percent in 1973. Though a rising share comes from secure neighbors like Mexico and Venezuela, the United States still gets about 10 percent of its oil from the Persian Gulf, twice the level in 1973.

The rising use of fossil fuels has also raised the atmosphere's level of carbon dioxide. The Clinton Administration pledged at a conference in Kyoto, Japan, last December to cut these emissions. That is not a simple task, said Daniel Yergin, chairman of Cambridge Energy Research Associates. "Environmental concerns point one way and prices point the other way," he said.

President Clinton is now striving to put energy efficiency back on the nation's agenda. He asked Congress for $6.3 billion over five years, including $3.6 billion in tax incentives and $2.7 billion for research. Accelerating the introduction of electric cars and other technologies would make energy savings nearly painless, he argues. Administration officials note that improving technology has already allowed Americans to live better with far less energy than they would otherwise use. Since the mid-1980's, however, these advances have slowed.

Many corporate executives and members of Congress call global warming a distant peril with uncertain causes. They portray the Administration's plans as a costly threat to the nation's prosperity. They also discount the danger of rising imports, saying that free markets will relieve high prices or tight supplies by promoting increased output and efficiency. In a compromise, Congress allowed $202 million of the $473 million for research this year but nothing for tax incentives.

It was 25 years ago this month, and again in late 1978, that vengeful Middle Eastern oil exporters squeezed their supplies to the United States and raised prices worldwide. A nation that was virtually self-sufficient into the 1950's had become a petroleum captive. Gasoline prices soared, lines at the pump stretched beyond frustration and the economy fell into repeated recessions.

Americans turned down their thermostats and bought fuel-efficient Hondas,

Datsuns and Toyotas. At work, they replaced millions of inefficient motors, lighting fixtures and generators. President Nixon called for a national effort on the scale of the making of the atomic bomb.

"Let us set as our national goal," he said, "with the determination of the Manhattan Project, that by the end of this decade we will have developed the potential to meet our own energy needs without depending on any foreign energy source."

President Carter, wearing a sweater in a televised speech to drive home his point, termed energy conservation the equivalent of fighting a war.

But traumatic memories of oil shocks have long been soothed by plentiful, low-cost supplies. At about $1 a gallon -- compared with $1.10, adjusting for inflation, in 1973 -- fuel is as cheap as ever. United States gasoline prices remain less than half those in Europe and Japan, where energy is heavily taxed. Americans consume more than twice as much energy per person as Europeans or the Japanese.

The Energy Information Administration predicts that, in the absence of efforts to curb growing energy use, carbon emissions from burning fuel will rise 33 percent from 1990 to 2010, while the President has pledged to lower them by 7 percent. The agency's experts scoff at the prospects of meeting that goal unless prices rise significantly.

"If you look at our actions rather than words, it's evident we don't care," said Dwight K. French, a specialist on consumption trends. "Only the next crisis will again make conservation a priority. End of discussion."

On the Home Front:
More Square Feet and 'Vampires'

Here in Arvada, in the subdivisions carved into the sagebrush hills of Denver's suburbs, the McCrackens' new home will have far more efficient heating, air-conditioning and major appliances than the homes of 25 years ago. Modern weatherstripping and vinyl-sealed windows will help keep the Colorado cold out and the heat in. In energy consumption per square foot, the home of the late 1990's is the winner.

But not the overall champion. Since the early 1970's, the average size of a new home has risen to 2,100 square feet from 1,600, even as the average household has shrunk to 3 people from 3.6. "It's almost like the trend to sport utility vehicles," said Donn D. Eley, chief financial officer of Village Homes, the McCrackens' builder. "They can't build them big enough."

Ellen Jaskol for The New York Times

Like many Americans, Michael and T.C. McCracken of Arvada, Colo., have a new house that is loaded with energy hungry features.

Charts: Bigger Homes, More Appliances

Home builders are also bringing to tract homes the expansive features once reserved for mansions. "Wow factors," they are called in the trade. In the $150,000-to-$300,000 range, the confined quarters of yesteryear just won't do.

Larger homes with fewer people but more things to plug in have pushed home energy consumption back to the levels of the 1970's. Residential energy consumption per person fell by a tenth from 1973 to 1983 but has since risen about as much.

Tighter Federal standards for homes and major appliances promise to save enough energy over the coming years to offset what goes to heat and cool larger homes. But then come the computers, videocassette recorders, dishwashers, clothes washers and dryers that have been using about 5 percent more energy a year since 1990. Early in the next decade, the Energy Department predicts, such appliances will consume even more energy than heating.

Many of these devices are always on, ready at the push of a button. Razors and electric toothbrushes have chargers, fax machines are poised to send and receive, televisions and videocassette recorders merely go dormant, not off.

Together, these items use more power than a refrigerator. "They're called vampires," said Arthur H. Rosenfeld, a senior adviser for efficiency at the Energy Department. "They suck electricity."

Central air-conditioning, in less than 40 percent of new homes in 1971, is now in more than 80 percent. Dishwashers have gone from luxuries, found in 19 percent of households in 1970, toward necessities, found in 57 percent as of 1996.

The standard ceiling height has risen to nine feet from eight, meaning more space to heat and cool. "Even though the efficiency of larger homes has improved," said Gopal Ahluwalia, research director for the National Association of Home Builders, "the total volume, the use of glass, the fireplaces and the appliances lead to higher energy consumption. They will not buy a home without these energy-inefficient features."

As Coloradans who believe weekends were made for hiking and cross-country skiing, the McCrackens, trim 31-year-olds, say they would like to live greener. To save water and energy, they plan to pay about $300 extra for a high-efficiency washer and dryer. McCracken has even joined the declining 5 percent of Americans who ride mass transit -- for him a bus -- to his job as a consultant and programmer for I.B.M.

But their new house, like many today, is another story. Join the McCrackens in the Wyndham Park subdivision as they open the door to a 2,600-square-foot model home like the one they are buying nearby for $270,000. A towering entryway and its clerestory windows tilt their gazes upward. The two-story, 21-foot spaces continue on into the living room and the family room.

"What I love about this is the high ceilings," Mrs. McCracken volunteered. "I know they are terribly inefficient. But it does make it seem so spacious."

Her husband was nodding as Jack Zelkin, a senior marketing executive with the builder, listed the features. McCracken was already making plans to take advantage of the upgraded phone, cable and data wiring, for internal video and computer networks, that became standard a year ago, even in homes costing less than $150,000.

Saving energy has become a dormant issue, said Zelkin, who was once an energy-efficiency expert for the local utility.

"I'm a tree-hugging, granola-eating, environmental zealot," he said. "But if you give these buyers a choice between a Jacuzzi tub or extra insulation, they'll take the Jacuzzi tub every time."

On the Road:

Traveling Farther, and Less Efficiently

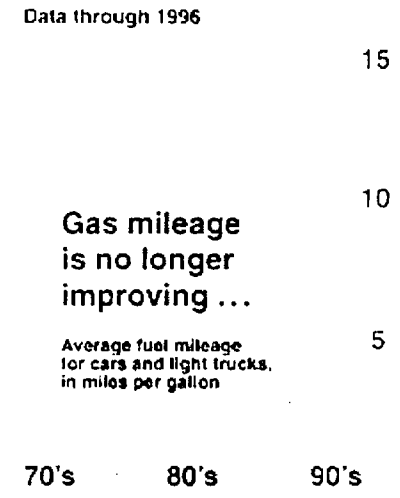
Americans are not only living in spacious new homes. They're also living in their cars.

From her home in Lakewood, another Denver suburb, Mrs. McCracken has driven her minivan about 20 minutes to Golden to drop off her daughter at day care. Then it is 10 minutes back to her office in Lakewood, at Harveys Wagon Wheel Hotel/Casino. Or, a couple of times a week, she drives 20 minutes to the casino itself in Central City.

After work, Mrs. McCracken reverses the pattern, often adding a stop at the King Soopers grocery store, the Blockbuster video store or the cleaner's.

From her new house, it will be 15 minutes more each way, meaning that she will spend up to two hours in the car every day.

Tens of millions of T. C. McCrackens who have entered the work force have become a prime factor pushing energy use for travel up 12 percent for each American since 1983, back to the previous peak in 1978. In 1975, only 47 percent of American women with children younger than 18 were working or looking for work. By 1997, it was 72 percent.



With gas mileage no longer improving and Americans driving more, total fuel consumption keeps rising.
Charts: Rising Fuel Consumption

Many households have almost enough cars to create their own traffic jams.

Nearly one in five households has three or more cars, up from about one in 25 in 1969.

Commuters of both sexes also live farther from work. The average commuting distance grew by more than a third from 1983 to 1995, to 11.6 miles, even as car-pooling and the use of mass transit declined.

While covering more miles, Americans are getting fewer miles per gallon now that they are buying nearly equal numbers of cars and light trucks. Back in 1975, light trucks accounted for only a fifth of sales.

Cars are meanwhile becoming more powerful. Auto makers that once concentrated on building leaner, more efficient models have instead been adding the muscle that customers crave. Average horsepower has risen to 156 in 1996 from 99 in 1982 -- and the time needed to zoom from zero to 60 has fallen to 10.7 seconds from 14.4. And as speed limits have increased, those cars are using still more energy.

As vice president for operations at A.A.A. Colorado, Vickie W. Stark's job is to encourage travel. But even she decided she was spending too much time behind the wheel.

Her husband, a computer network manager, had followed her in assignments from Washington to Florida to Cheyenne, Wyo., where they bought a home

north of town. When Ms. Stark got a job in Denver in 1995, he refused to budge.

And so Ms. Stark began driving more than two hours each way, or 127 miles, not counting her monthly one-day round trips to each of six offices elsewhere around the state.

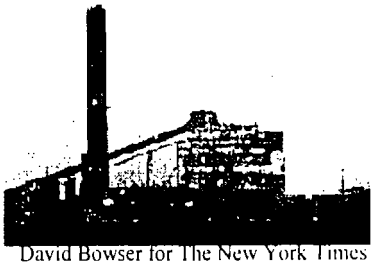
A few months after she began the long haul from Cheyenne, Ms. Stark made a habit of calling her husband and two children on her car phone just as she was passing the exit for Windsor, Colo., the halfway point. "If we lived here, I'd be home," she always said.

In September 1996, they moved again -- to Windsor. As a family, they did not save any driving, but they did redistribute it. Her husband now has a 52-mile trip north, and Ms. Stark a 63-mile trip south. All Ms. Stark has sacrificed by moving are bragging rights to the longest trip to work. Her neighbors next door and just across the street also work in Denver.

In the Factory:
Energy Conservation a Lower Priority

Three times a week, 100-car trains more than a mile long arrive brimming with coal at the Celanese Ltd. chemical plant near Pampa in the Texas Panhandle. The trains dump their contents into chutes that form a pile 10 stories high. Coal dust dances in the flatland winds.

The coal is burned to boil water, providing the heat for producing chemicals like acetic acid, which is used in clothing fibers and plastic parts. The plant also uses enough electricity to power a city of more than 50,000. In one of the most energy-hungry industries, Pampa makes chemicals that are twice as energy intensive per pound as the Celanese average.



David Bowser for The New York Times

Sun setting behind distillation towers of Celanese plant, Pampa, Tex. American industry has actually cut the amount of energy it uses in the last 20 years.
Charts: Industrial Energy Use

The plant, which opened in 1952, initially treated energy as if it were as cheap and plentiful as the air. Steam and heat were simply vented.

The oil embargoes of the 1970's brought a new outlook. Steam used in one process was rerouted to other processes. As a result, Pampa and other Celanese plants raised their energy efficiency 2 percent to 3 percent a year through the 1980's.

But in the 1990's, with lower energy prices reducing the payoffs, they have improved at less than half those rates, if at all.

"The emphasis is simply elsewhere these days," said Thomas Parker Jr., managing director for tax policy and energy at the Chemical Manufacturers Association.

Across all businesses, industrial and commercial energy use fell 18 percent from 1973 to 1983, then jumped 37 percent by 1997. The growing corporate appetite for energy comes despite the economy's shift from smokestack industries like steelmaking to software and entertainment.

Managers in many industries say they achieved the easiest savings long ago.

"We picked the low-hanging fruit first, in the 70's and 80's," emphasized Edward E. Quick, the environmental manager for Celanese. "As we move into the 1990's, we're finding the available technology much more costly."

Amory B. Lovins, whose Rocky Mountain Institute promotes energy efficiency, will hear none of it. He rattles off a half-dozen technologies like computerized controls that he says the chemical plants have failed to adequately exploit. "When the Celanese guys say you're running out of low-hanging fruit, the only thing I can say, based on the experience of people in this industry, is that the fruit is bushing up around our ankles."

Riley R. Kothmann, who runs the Pampa plant, has some ready answers. His tour includes a room where walls of dials and meters have been succeeded by banks of computer screens and controls.

But at times, it seems, fruit from higher branches drops on plant supervisors' heads. Even without reaching for energy savings, they find, the savings often land on them.

Compelled by law to contain emissions, Pampa's technicians found that those emissions could go back through a turbine to raise the plant's electricity production by nearly 10 percent. Or there was the time three or four years ago when managers began wrapping insulation around the joints where pipes are bolted together. "Pampa just had a tradition of not doing it," Kothmann said. "It's so much easier to continue doing things the way you used to."

To meet the goals of the Kyoto treaty for reducing emissions, Celanese executives say they would have to improve their energy efficiency by 3 percent a year through 2010, or as rapidly as in the 70's and 80's. All the technology they know of cannot meet that goal unless they cut production, said R. David Damron, the company's director for Government affairs. If Washington insists, he said, "you're going to stifle growth."

Celanese is still hedging. In early June, a company energy committee was assigned to find ways of meeting the goals, whatever the costs. The next step will probably be to find ways of doing the suggested projects at manageable costs. Kothmann, a member of the committee, recalls that environmental controls expected to cost $800 million a few years ago were delivered for less than $300 million. "Our experience has shown that we can achieve much more for much less than we anticipated it costing us," he said.

Energy use is rising in corporate offices as well as plants. Like homes, they have far more efficient heating, lighting and cooling, but also far more electronics.

Electric utilities have cut their support for installing more efficient equipment to $1.9 billion in 1996 from $2.7 billion in 1994. They say they cannot afford these programs in the competitive new era of deregulation.

Consolidated Edison, which serves New York City and most of Westchester County, cut its efficiency program to $31 million last year from $125 million in 1993 and has now eliminated it. Customers had been rewarded for deeds like installing more efficient appliances and compact fluorescent light bulbs instead of standard incandescents.

In its place, Con Ed, with state backing, plans to spend $25 million to $30 million a year on programs including low-cost loans for companies to develop more efficient electrical products and incentives to help them sell these

products more cheaply.

"For less of an incentive per light bulb, appliance or motor, you can get a lot more in energy savings," contended Stephen Pertusiello, the company's program manager for market transformation.

But Peter A. Bradford, the chairman of the New York State Public Service Commission from 1987 to 1995, said Con Ed's case was at best uncertain. "You are replacing a known and proven set of programs with speculation," he said.

In the Political Arena:
Calls for Action Face Challenges

Presidents going back to Richard Nixon have tried to arrest the nation's growing energy use. In the face of the 1973 oil embargo, he urged the nation to turn down its thermostats, form car pools and more. He announced that December that the lights on the national Christmas tree would be kept off. The next month, he signed the Emergency Highway Conservation Act, setting a speed limit of 55 miles an hour.

The first fuel-efficiency standards for cars took effect in 1975, requiring the average to double, to 27.5 miles a gallon, over a decade. By 1977, Jimmy Carter was promoting the search for renewable sources of energy like sunlight, wind, wood and wastes. He called his conservation campaign "the moral equivalent of war."

Then, in 1978 and 1979, another round of production cuts by the Organization of Petroleum Exporting Countries, compounding shortages caused by American price controls and regional allocations, brought the gas lines back. More than half the nation's gas stations were closed during the first summer weekend in 1979.

DIFFERENT PLACES, DIFFERENT PACES

Energy costs in the United States are much lower than in Europe or Japan, which helps explain why Americans consume far more energy per person than the Japanese or Europeans. Even though the United States has made greater gains in efficiency, improvement has slowed in the 1990's and its economy uses energy much more inefficiently than other industrial nations.

Charts: Lower Costs, More Use

As gasoline climbed by 1981 to $2.05 a gallon in today's dollars, the nation began its most successful peacetime conservation effort. Americans used 43 percent less energy for every dollar of gross domestic product in 1986 than at the peak in 1972. From 1987 through last year, energy use per dollar of output declined by only an additional 8 percent.

By the mid-1980's, OPEC was in disarray and energy prices had declined. President Ronald Reagan cut back conservation and renewable-energy programs. The rural speed limit was raised to 65 miles an hour.

This decade brought a reminder that foreign oilfields have their risks. Iraq's invasion of Kuwait in 1990 provoked a stock market selloff and a run-up in energy costs that contributed to the decade's only recession, the third in a row that came after oil supplies were pinched.

President Clinton, taking office in 1993, asked Congress to raise taxes on all fuels, including coal, by the equivalent of a dime a gallon. He got 4.3 cents on motor fuels only. In 1995, Congress repealed the national speed limits, and most states set their own at 65, 70 or even 75.

Over the last year, President Clinton has sought to make energy efficiency a renewed national priority. But to keep down the costs of reducing emissions, the United States plans to achieve only about a quarter of the required reductions itself. The trading of emissions rights would allow America to pay other nations to achieve the rest.

At home, the White House wants to promote advances in electric cars, renewable energy and the like.

"My gut is, we will see the introduction of these new technologies very quickly," said Ernest Moniz, the Under Secretary of Energy, whose responsibilities include the efficiency programs. With much of the technology already available, he said, "We're not waiting for some magic bullet."

Republicans in Congress have portrayed the Kyoto accord as a dangerous effort to shape energy policy by raising false environmental fears. It leaves out developing nations, they say, and by requiring drastic energy savings, it threatens the United States with job losses resulting from much higher costs than the Administration acknowledges. Chuck Hagel, the Nebraska Republican who led the Senate's delegation to Kyoto, says that for all the risks of growing dependence on imported oil, "The answer is not just to say we're going to lower everybody's standard of living."

In the face of such opposition, President Clinton has not yet sought Senate ratification, saying that he, too, wants to include developing nations. But Europe and Japan are clamoring for the United States to take action, and the Administration has promised to submit the treaty next year.

Conservation is now so unpopular that its advocates shun the label. "Use the term efficiency," said Lovins at his Rocky Mountain Institute headquarters in Old Snowmass, Colo. "Conservation to a third of Americans means doing less, worse or without. It means privation, discomfort and curtailment."

If the cause of energy conservation has a last, remote redoubt, it is his stone-and-glass compound 7,100 feet high on the western flanks of the Continental Divide. There, he shows off an indoor tropical forest, luxriant with pink and yellow bougainvillea and a banana tree that has yielded 26 crops. Despite temperatures as low as 47 degrees below zero, he has no heating bills and no furnace. Instead, he has triple weatherstripping and heat-trapping windows and walls.

Technological efficiencies, or what Lovins calls negawatts, can capture energy far more cheaply, in his view, than spending billions to build more power plants or produce more oil from remote or politically volatile regions.

With energy prices so low, however, some in Washington say that high demand is only a sign that free markets are working in everyone's best interests. "Those who have an energy fetish argue that saving energy is more important than saving money or time," said Fred L. Smith, president of the Competitive Enterprise Institute there. Low energy prices allow more people to afford air-conditioning and cars, he says. "If we raise the price of energy, we will push some people back onto the buses."

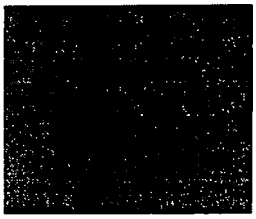
But just as open-heart surgery is far more traumatic than regular exercise and a low-fat diet, other experts say that an abrupt response to another oil shock or environmental crisis could make the earlier discipline of gradual energy savings seem mild.

For Joseph J. Romm, who until recently ran the Energy Department's efficiency programs, it is only a question of when the nation will return to conservation, not if. Contending that the world's oil supplies will eventually tighten and temperatures rise, he said, "Ten years or 15 years from now, people will be desperate to take action."

Home | **Site Index** | **Site Search** | **Forums** | **Archives** | **Marketplace**

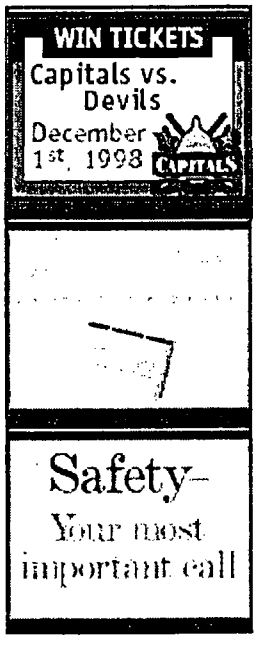
Quick News | Page One Plus | International | National/N.Y. | Business | Technology | Science | Sports | Weather | Editorial | Op-Ed | Arts | Automobiles | Books | Diversions | Job Market | Real Estate | Travel

Help/Feedback | Classifieds | Services | New York Today



Related Items
Print Edition
Today's National Articles
Inside "A" Section
Front Page Articles

On Our Site
Top News/Breaking News
Politics Section
National Section



President Signs Bill For Agency Funding

Lawmakers Decry Dealmaking Process

By George Hager and Charles R. Babcock
Washington Post Staff Writers
Thursday, October 22, 1998; Page A01

President Clinton signed a huge year-end spending bill yesterday, ending the threat of any government shutdown this year but leaving a bitter taste among some House and Senate members who resented how Congress finally wrapped up its business and shot out of town.

Clinton's afternoon signing came just hours after the Senate voted 65 to 29 to pass the bill and completed other last-minute legislation for the year. The House had approved the measure Tuesday night, 333 to 95.

Senators from both parties complained bitterly that the huge omnibus bill was largely a product of closed-door negotiations and horse-trading between the White House and Congress's top GOP leaders, Senate Majority Leader Trent Lott (R-Miss.) and House Speaker Newt Gingrich (R-Ga.).

"Today I was asked to be nothing more than a rubber stamp for a deal made by a handful of individuals who presumed they had the power to speak for all of us," said Sen. Rod Grams (R-Minn.).

Sen. Max Baucus (D-Mont.) called the final two weeks of backroom negotiations a "corrupt" process that "disenfranchises most senators."

Even senators who voted yes expressed dismay. "Next year," said Sen. Charles S. Robb (D-Va.), "we have to do better."

The roughly $520 billion bill contains funding for much of the government for the fiscal year that began Oct. 1 and will provide $17.9 billion of new financing for the International Monetary Fund and $1.1 billion as a down payment to hire 100,000 new teachers. Included in the sprawling measure were eight unfinished spending bills that provide funding for 10 Cabinet departments and scores of federal agencies.

The huge bill completed Congress's work for the year and included a long, bipartisan list of projects that members could tout to constituents before the Nov. 3 elections -- from multibillion-dollar increases for defense spending to micro-grants of a few million dollars or less for local airports, dams and visitor centers. That provoked still more criticism of the measure, however.

Clinton, at an event to promote awareness of breast cancer prevention and research, took time out to boast about how the budget in the end

James W. Rubin
10/27/98 09:50:41 AM

Record Type: Record

To: Julie M. Anderson/WHCCTF/EOP, Martha L. Wofford/WHCCTF/EOP

cc:
Subject: fyi

Martha, Julie - fyi

---------- Forwarded by James W. Rubin/WHCCTF/EOP on 10/27/98 09:52 AM ----------

Michael D. Gerich
10/27/98 09:28:01 AM

Record Type: Record

To: Gary L. Bennethum/OMB/EOP, James W. Rubin/WHCCTF/EOP, Mesaros.linda @ epamail.epa.gov, Cynthia A. Vallina/OMB/EOP

cc:
Subject: fyi

---------- Forwarded by Michael D. Gerich/OMB/EOP on 10/27/98 09:27 AM ----------

BNA, Inc.

Daily Report for Executives

No. 207
Tuesday October 27, 1998

Regulation, Law & Economics

Energy
Millions Added to DOE Energy Efficiency, Renewables on Coattails of Climate Change

The nation's fiscal 1999 budget aims more than $1 billion at research to reduce greenhouse gas pollution, and the Department of Energy's renewables and energy efficiency programs reaped the benefit of lawmakers' embrace of the global climate change issue, Energy Department officials said Oct. 26.

Overall, lawmakers agreed to nearly nine out of every ten dollars the administration requested for energy efficiency and renewables, appropriating 16 per cent more than last year, energy officials told reporters at a briefing.

Dan Reicher, DOE assistant secretary for energy efficiency and renewable energy, said that the appropriation measure (H.R. 4328) signed into law Oct. 21 includes $4 million in new funding to ease the

transition from a network monopoly to gradually deregulated electric utilities.

Of this amount, Congress provided $1.5 million dollars for analysis of the effect of electric industry deregulation on renewable energy, and $2.5 million for government scientists to research new technologies to assure that electricity is delivered reliably in a decontrolled market.

For example, Reicher said, the research and development money could be used to figure out how to cut peak time electricity demand, improve software, store electricity on the grid, and even invent a better transmission wire.

Renewables Cheaper, More Reliable

Responding to questions about the progres of renewable technologies in the 25 years since the Arab oil embargo, Reicher replied: "Price is down, reliability is up."

Wind energy is a "success story," Reicher said, in part because the price has dropped from a high of about 40 cents a kilowatt hour to 4 to 6 cents/kwh. That decline was aided by a tax incentive of 1.5 cents/kwh, he said.

Solar energy also has come down in price from about $1/kwh to 15 to 30 cents/kwh, he said.

$1 Billion for Climate Change

Funding for the Climate Change Technology Initiative is spread throughout three appropriations bills that were rolled into the omnibus measure:

- Energy and water development, $350 million, with $14 million for basic research on carbon sequestration and $336 for DOE's Solar and Renewable Energy Portfolio. The portfolio, which officials said emphasizes diversity, includes installation of 1 million solar roofs on homes and offices nationwide by 2010, speeding research on the next generation of wind turbines, rural biopower, producing hydropower generating turbines that are "fish friendly" and more energy efficient, and a resumption of funding after a two year hiatus for Climate Challenge, a voluntary partnership between DOE and 640 electric utilities that officials estimate will decrease carbon emissions by 47 million metric tons in two years.

- Interior, $552 million, including partnerships between DOE and energy intensive industries that officials predict will save more than $10 billion in energy costs by 2010; development by 2004 of a triple efficient family sedan that would reduce carbon emissions by 1.4 million metric tons; and funding for the Energy Information Administration to track voluntary greenhouse gas emissions efforts. Reicher said that under the Interior appropriation, high priority is placed on tough new performance standards for washing machines, water heaters, fluorescent lights, and central air conditioning.

- Veterans Administration, Housing and Urban Development and Independent Agencies, $119 million, including $109 million to the Environmental Protection Agency to fund Green Lights and Energy Star Buildings, an energy efficiency partnership program with small business and schools.

The Washington Post

NOV 23 1998

Circ: 852,262

AES to Buy an Illinois Power Company in Big Push Into U.S. Market

By Martha M. Hamilton
Washington Post Staff Writer

A9

AES Corp., the world's largest power company that is moving aggressively to compete in the U.S. market as it becomes deregulated, yesterday agreed to buy a Midwest utility company.

Arlington-based AES agreed to pay about $885 million, or $65 a share, for Cilcorp, which owns Central Illinois Light Co. The 85-year-old electric and gas utility company, with headquarters in Peoria, serves about 250,000 retail customers in Illinois, where utility industry deregulation is underway. AES also agreed to acquire $400 million in debt from Cilcorp.

Cilcorp's stock closed Friday at $53.43 a share on the New York Stock Exchange. AES's stock closed at $43.35/4 on the NYSE.

Under deregulation, the $200 billion market for electric power is expected to shift from a landscape dominated by regional monopolies, such as Potomac Electric Power Co. or Virginia Power, to one where larger companies compete all over the United States to win industrial and residential customers in the same way long-distance telecommunications providers now compete for business.

Although moves in Congress to deregulate the electric power market have stalled, more than a dozen states, including Illinois, have passed such measures.

AES, which had $1.4 billion in sales last year, has bought or built more than 100 power plants in 19 countries in Asia, Europe, the former Soviet Union and Latin America. Most of its power plants are outside the United States, but that has begun to change as the opening of the U.S. market to competition has made it an increasingly attractive investment. Since 1996, when AES spent 10 percent of its development budget in the United States, the percentage has increased to 35 percent.

In May AES bought three electric power plants from Southern California Edison Co., and it is building plants elsewhere, including at Cumberland, Md.

The deal agreed to yesterday gives AES its first U.S. distribution company, along with distribution companies in El Salvador, Argentina and Brazil. Distribution companies are those that bring natural gas or electricity directly to customers' homes or businesses, compared with companies that specialize in generating electricity or marketing—buying from multiple power sources and delivering to customers via the distribution companies.

Under the transaction, Cilcorp will become a wholly-owned subsidiary of AES. The deal must be approved by Cilcorp shareholders, the Federal Energy Regulatory Commission, the Illinois Commerce Commission and the Securities and Exchange Commission. Justice Department and Federal Trade Commission approval also is required.

AES President Dennis W. Bakke said yesterday that his company began talks with the Cilcorp about six months ago. "It gives us a very good start in the retail, wholesale business in this part of the country," he said.

Bakke said the approach to deregulation that Illinois took, which sets a limit on the price providers may charge for power and allows cost savings to be shared by customers and shareholders, was part of the company's appeal.

Central Illinois Light is one of the nation's smallest investor-owned utilities, according to a report on the electric utility industry by PaineWebber Inc. The report also said the firm has low electric rates. Tom Tribone, executive vice president of AES, who helped put the deal together referred to it as "the most competitive electric and gas supplier in Illinois."

The companies expect the deal, which was approved yesterday by Cilcorp's board of directors, to be completed by mid-1999.

To: Boblaw424@aol.com
From: kbossong@cais.com (Ken Bossong)
Subject: Re: Fwd: Renewable Energy Key To Meeting Kyoto Global Warming Goals

> Renewable Energy Key To Meeting Kyoto Global Warming Goals
>
> SACRAMENTO, Calif.--(BUSINESS WIRE)--Nov. 17, 1998--California's
> renewable energy industry will play a key role in fighting global climate
> change in this state and worldwide, according to a report released today
>by
> the Renewable Energy Marketing Board (REMB)
> -- titled How Emerging Green Markets Help Respond to Global Climate
>Change
> -- which paints a very positive picture of the industry in the first year
> of electric deregulation.
>
> ``California's renewable energy industry has been growing faster this
>year
> than it has in the past 10 years," said REMB Executive Director Steven
> Kelly. ``We're in the perfect position to help the United States meet,
>and
> even exceed, the emission reductions set by the Kyoto Agreement."
>
> Highlights of the report include:
>
> -- 55 new renewable projects will be operational by early next year
> -- helping avoid the annual release of 286,113 annual tons of
> carbon dioxide -- the most troublesome greenhouse gas said to
> cause global warming -- as well as 1,300 tons of sulfur dioxide;
> 1,634 tons of nitrogen oxide; 255 tons of carbon monoxide; and 73
> tons of small particulates.
>
> -- Existing renewable energy plants supply 11% of the electricity
> consumed in California, and represent over $6 billion in private
> sector investment and well over $400 million in annual tax
> revenues.
>
> -- Experts estimate that approximately 50 percent of all residential
> power switches in California have gone to green power providers.
>
> ``Fixing a problem as all-encompassing as climate change can seem
> overwhelming to many people," said Kelly. ``We want to let consumers
>know
> that there's an industry right in their own backyard offering a local
> solution to a global problem -- in other words, they can help."
>
> Under California's restructured electric industry, residents, businesses,
> and local governments have the ability to choose their electricity
>provider
> for the first time ever. A number of marketers have responded by offering
> electricity products produced from renewable resources and other
>``clean"

> sources that emit little or no pollution -- such as greenhouse gases.
>
> ``Choosing to buy electricity from a 'green power' company is an easy and
> affordable way for citizens to help reduce global warming and protect the
> environment as a whole," said Kelly. ``Who wouldn't want to do that?"
>
> The old, dirty fossil fuel used to generate the electricity for an
>average
> California household produces the same amount of climate-changing carbon
> dioxide as a car driven a third of the way around the world.
>
> The full report is available on-line at http://www.cleanpower.org or from
> the Renewable Energy Marketing Board by calling 916/448-9499.
>
> Contact:
> Renewable Energy Marketing Board
> Lori Jablonski, 916/442-7785
> www.remb.org
>
>

Subject: Good news on Climate and Economy -- from Missouri!
Date: Thu, 18 Jun 1998 13:05:27 -0400
From: "Jensen, Thomas C." <thomas.jensen@troutmansanders.com>
To: "'Dirk Forrister'" <forrister_d@btgcinema.com>,
"'Linda_Lance@oa.eop.gov'" <Linda_Lance@oa.eop.gov>
CC: "'Joe.Romm'" <Joe.Romm@hq.doe.gov>

>St. Louis Post Dispatch
>Tuesday June 16, 1998
>Metro Section
>
>Plant shows Kyoto environmental treaty can be a blessing, general manager
>says
>
>Tuesday, June 16, 1998
>
>By Lia Dean
>Post-Dispatch Washington Bureau
>WASHINGTON -- The Ashley Street power plant isn't just getting recognition
>in the metro area. The St. Louis plant was mentioned in a congressional
>hearing last week on the impact of the Kyoto treaty on the environment.
>
>That mention was one of the few upbeat moments in hours of testimony on the
>dollar-and-cents consequences of the treaty, which aims to cut global
>releases of carbon dioxide.
>
>Many scientists say carbon dioxide emissions are gradually boosting the
>Earth's temperature - a phenomenon dubbed the "greenhouse effect."
>
>The Kyoto Treaty was wrapped up last December in Kyoto, Japan. President
>Bill Clinton's administration endorsed it, but only after extracting key
>concessions.
>
>Even so, the treaty faces steep hurdles to ratification by the U.S. Senate.
>Opponents fret that in cutting back carbon dioxide, the treaty will also
>cut back the American economy.
>
>To the contrary, says Dan Dennis, general manager of Trigen-St. Louis
>Energy Corp., owner of the Ashley Street Plant. The company says its work
>on Ashley Street proves that the Kyoto rules can actually be a boon.
>
>"To meet Kyoto, the old technologies will not work," says Dennis.
>
>"Carbon dioxide emissions can be decreased only by being more efficient.
>The industry will transform itself."
>
>And that's the point, experts say, where the agreement negotiated in Japan
>intersects the work on Ashley Street.
>
>Most analysts agree the Kyoto treaty will hurt American businesses.
>
>Lining up in opposition to the Kyoto accord are the National Association of
>Manufacturers, a conservative think tank called the Competitive Enterprise
>Institute and the power industry's trade association, the Edison Electric
>Institute.
>
>Missouri's two senators - Christopher Bond and John Ashcroft, both
>Republicans - oppose it.
>

>Sen. Dick Durbin, D-Ill., says he will not support it until more of the
>world's less-developed countries sign on. Sen. Carol Moseley-Braun, D-Ill.,
>has not taken a position but has expressed concern over the treaty's
>implications for Illinois businesses.
>
>Last Tuesday, an economic forecasting firm called WEFA predicted that the
>agreement would cost the average family $2,700 a year in 2010.
>
>The study forecasts that the Kyoto treaty will cost 48,700 jobs in Missouri
>and 190,700 jobs in Illinois - and will raise gasoline prices by almost 65
>cents a gallon.
>
>"Consumers must understand that they are personally taking on this burden,"
>WEFA's Mary Novak said. "The toll that it would take on our middle- and
>low-income families is extraordinary."
>
>But backers of the treaty note that WEFA got the money for its study from
>big oil - the American Petroleum Institute, with its built-in opposition to
>fuel conservation.
>
>In its fight for ratification, the White House has few friends in business
>circles. But it has Trigen's support.
>
>The company's chief executive officer spoke in October at Clinton's
>conference on climatic change. That same month, Clinton cited Trigen in a
>speech on energy and the environment.
>
>Copyright (c) 1998, St. Louis Post-Dispatch
>
>
>Ashley St. power plant is getting new life
>Small firm plans to run new technology in old site
>
>Tuesday, June 16, 1998
>
>By Lia Dean
>Post-Dispatch Washington Bureau
>WASHINGTON In the St. Louis of 1904, the Ashley Street power plant wowed
>World's Fair crowds by producing one of the most technological miracles of
>its time: electricity.
>
>And now, thanks to a $7.5 million investment in a new gas turbine, the
>plant is about to be home once again to some of the energy industry's most
>promising technology.
>
>Trigen-St. Louis, a subsidiary of New York-based Trigen Energy Corp., is
>among a handful of independent power producers that use new technology to
>generate electricity more efficiently and cheaply.
>
>Conventional fossil-fuel power plants burn coal, natural gas or oil to boil
>water. The hot water produces steam, which then turns a turbine that
>generates electricity.
>
>Most plants release the steam into the atmosphere or into a nearby body of
>water. But in Trigen's system, called cogeneration, the steam gets piped
>back into a turbine. There, it generates more electricity and, as a
>byproduct, lower-temperature steam.
>
>The practical impact: Trigen's plant will harness 70 percent of the heating
>value of the natural gas it uses. Most power plants harness less than half
>-- sometimes, a lot less.

>
>Trigen also takes advantage of another anachronism from St. Louis' past: a
>steam-heating system the city built in 1922.
>
>Twenty-two miles of pipe under downtown streets connect office buildings so
>that all can be heated by steam from the boilers at the Ashley Street
>plant.
>
>Trigen pipes steam to 135 customers, including the Trans World Dome and the
>Gateway Arch. That steam is used for everything from cleaning clothes at a
>laundromat to making Tums at SmithKline Beecham.
>
>When the company finishes its new cogeneration turbine in May, it will be
>able to send electric power through the pipes, too.
>
>Trigen remains a small company, with 30 employees in St. Louis and revenue
>of $7.5 million last year, about the same amount it is spending on this
>project.
>
>Its area is small, with its most distant customer only three miles away.
>Its generators are relatively tiny, too.
>
>The new Trigen turbine will produce only 5 megawatts of power. That's about
>the same amount a new convention hotel proposed for downtown will use in
>peak hours.
>
>Companies such as Trigen supply about 5 percent of the nation's
>electricity. But experts say the number may grow as the electric power
>industry changes.
>
>In 1992, Congress opened up competition among electric utilities, which had
>operated as regulated monopolies since the 1910s.
>
>The monopoly status meant that independent producers such as Trigen had to
>sell their electricity through utilities such as Union Electric instead of
>directly to retail customers. The reason: Union Electric had a monopoly on
>the transmission lines.
>
>The 1992 National Energy Policy Act ended the utilities' monopoly on
>transmission. But it left the details of deregulation up to the states, and
>in Missouri, nothing has yet made it into law.
>
>"Missouri is very far behind the rest of the nation in electrical
>deregulation," says Dan Dennis, general manager of Trigen-St. Louis. "We
>obviously would like to see that accelerated. We think once the market is
>deregulated, that will be the true driver for systems like ours."
>
>Dennis predicts systems such as his could supply up to a quarter of the
>nation's electricity. Industry experts are skeptical.
>
>"I think there are opportunities for these things - but how big they are is
>a different question," said J. Alan Beaman of the Energy Information
>Association, part of the Department of Energy.
>
>Beaman said demand for cogeneration depends somewhat on the demand for
>steam, a product with a more limited market than electricity.
>
>He also said that cities without a network of steam pipes might find it
>hard to justify the cost of tearing up streets to install such pipes.
>
>But Beaman and other analysts agree that efficient production of

>electricity
>will become increasingly valuable as the industry adjusts to competition.
>

>
>
>What's after cogeneration? Firm plans 90 pct.-efficient `trigeneration'
>process
>
>Tuesday, June 16, 1998
>
>Lia Dean
>WASHINGTON -- Trigeneration - it's the hat trick of energy.
>
>As the name suggests, trigeneration goes one up on cogeneration, a two-step
>process.
>
>Cogeneration reuses steam not only to generate more electricity but also to
>heat buildings. Cogeneration is about 60 percent efficient - that is,
>cogeneration captures 60 percent of the energy from each unit of fuel it
>burns.
>
>
>But 60 percent is kid stuff for trigeneration.
>
>Trigeneration produces electricity for power, and steam for heat and
>chilled water for air conditioning. And it squeezes 90 percent of the
>energy from a unit of fuel.
>
>Trigen-St. Louis has plans to start "trigenerating," although officials say
>it's probably three to five years down the road.
>
>"Once we hit the trigeneration, that's the golden egg for all the units,"
>said Dan Dennis, general manager. "We'd like to go after that target."
>
>

>

NY Times 6/17/98 A28 1/2

Fuel Cell Will Supply All Power to a Test House

By MATTHEW L. WALD

WASHINGTON, June 14 — For the first time, an energy technology called a fuel cell will supply all the power to a suburban house, another sign that the innovation is on the verge of breakthrough as an economical alternative to traditional energy sources.

The idea of fuel cells, which convert liquid fuel into electricity through a chemical reaction rather than combustion, has been around for more than 100 years. But until recently, fuel cells were so expensive that they were was practical only for specialized use on space missions. But the cells being tested now are powerful, flexible and reliable. And although they are still expensive, confidence that new designs can be mass-produced at reasonable costs is growing.

On Wednesday, a team of engineers will cut the electricity from the local utility to a brick ranch-style house in Latham, N.Y., and switch on a device that looks more like a home central air-conditioning unit than the small chemical plant it really is.

Developments in the past few weeks include the first commercial sale of a fuel cell for remote power (to the New Jersey Department of Transportation, for a traffic warning sign) and the first street-ready car powered by a fuel cell (built by students at Humboldt State University in California). A former nuclear weapons scientist at Los Alamos National Laboratory in New Mexico is experimenting with a tiny cell that converts methanol into enough current to run a laptop computer or a cellular telephone. And in April, Ford put $420 million into Ballard Power Systems, a fuel cell company in Vancouver, British Columbia, in which Daimler-Benz already has a major

New progress on an old idea for producing electricity.

investment.

Officials at the Energy Department, which is helping to pay for the test in Latham, near Albany, say they have high hopes that within a few years thousands of homes will be drawing electric power from fuel cells, cutting pollution and fuel consumption.

"In the last year, we've seen significant breakthroughs," said Federico F. Peña, the Energy Secretary, in a telephone interview. "We're so-

David Jennings for The New York Times

A consultant, Dan O. Jones, left, checked a fuel-cell system at a house in Latham, N.Y., yesterday with the project manager, Richard Maddaloni.

num foil. The membranes are crucial in facilitating a basic chemical reaction — the combination of oxygen and hydrogen to make water — into the basis of an energy revolution. W.L. Gore & Company has taken its signature product, Gore-Tex, and put it into the membranes of fuel cells, including the one in Latham, in a way that many researchers say has great promise.

Jonathan H. Leonard, the program supervisor for fuel cells at California's South Coast Air Quality Management District, one of many government agencies eagerly watching the research, said, "Splitting water into hydrogen and oxygen is a simple process that takes electricity. Combining them to make water and electricity, well, you don't get much simpler than that. I don't think there are many doubters."

Certainly not Michael M. Walsh, a mechanical engineer who is a consultant to Plug Power, the company running the Latham test. Mr. Walsh lives in the Plug Power-owned house five days a week with, among other devices, a stereo, a personal computer and a clock radio that wakes him in the morning. They will operate the same, whatever the electricity source, he said, and people inside the house "won't know whether we are running on the grid or not."

But for all the breakthroughs, fuel cells are too expensive for everyday use. Car companies, which would probably be the biggest users of a cost-effective fuel cell, say the cost is roughly 100 times more per horsepower than an internal combustion engine. Chrysler, for example, figures that each mass-produced fuel cell

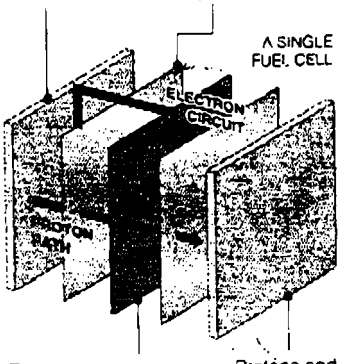
HOW IT WORKS

The Fabric Heart Of an Energy Cell

Scientists are now using Gore-Tex, the waterproof fabric used in foul-weather gear, to make ultra-thin membranes for fuel cells. Here is how a membrane functions.

Hydrogen, which is made of a proton and an electron, is channeled to the fuel cell through these panels

Electricity is produced when the plate strips away the electrons and directs them through a circuit.



The protons pass through the membrane. The thinner the membrane, the more easily protons pass.

Protons and electrons join with oxygen and form water.

DETAIL ABOVE

"It's an arms-length sale, with no subsidies, with a warranty, and all the aspects of a commercial sale," said Arthur Kaufman, an executive at H-Power.

In another application of fuel cells, Robert G. Hockaday, a researcher on leave from Los Alamos National Laboratory, bombarded a thin plastic film with neutron radiation to form pores where the hydrogen-oxygen reaction can take place. He predicted he could keep a cellular phone on standby for more than a month on two ounces of methanol. But he does not yet have a prototype that generates enough power in a small enough volume.

A big part of the expense is that fuel cells are hand-assembled, mostly by Ph.D.'s, because there is still no mass market. That, in turn, is because the components still cost too much, but elements of the equation are changing, thanks to work being done in various laboratories. One step has been to reduce the amount of platinum, a catalyst in the chemical process, to one-fifth of former levels.

Another, accomplished by the Gore company, has been to strengthen the gel-like heart of the system. The heart, in the fuel cell used in Latham and in those being explored for cars, is a proton exchange membrane. Anything positively charged, like the proton that is the nucleus of a hydrogen atom, jumps from one side of the membrane to the other.

When a hydrogen atom, consisting of one proton and one electron, is pressed against the membrane, the proton goes through and the electron does not. That creates a positive charge on one side of the membrane and a negative charge on the other; wire them together, and electricity flows.

DuPont's membrane, sold under the trade name Nafion, does not readily transport the hydrogen ions from one side to the other until it is wet. It takes time for the water that is produced to suffuse the membrane and, once it is wet, the membrane loses two-thirds of its strength. Because fuel cells are typically arranged in "stacks," with layers of membranes, fixing a flaw is difficult.

But fuel cell experts say Gore has taken a step to solve the problems of cost, fragility and start-up time. Embedding Gore-Tex, the material it sells to textile mills for use in windbreakers and caps, produces a membrane that is 20 microns, about half as thick as predecessors. It is cheaper to buy, gets wet faster, and lets protons slide through more quickly, but it is also stronger.

There are other areas for improvement. Currently, a square centimeter of membrane produces about half

On Wednesday, a team of engineers will cut the electricity from the local utility to a brick ranch-style house in Latham, N.Y., and switch on a device that looks more like a home central air-conditioning unit than the small chemical plant it really is.

Developments in the past few weeks include the first commercial sale of a fuel cell for remote power (to the New Jersey Department of Transportation, for a traffic warning sign) and the first street-ready car powered by a fuel cell (built by students at Humboldt State University in California). A former nuclear weapons scientist at Los Alamos National Laboratory in New Mexico is experimenting with a tiny cell that converts methanol into enough current to run a laptop computer or a cellular telephone. And in April, Ford put $420 million into Ballard Power Systems, a fuel cell company in Vancouver, British Columbia, in which Daimler-Benz already has a major

New progress on an old idea for producing electricity.

investment.

Officials at the Energy Department, which is helping to pay for the test in Latham, near Albany, say they have high hopes that within a few years thousands of homes will be drawing electric power from fuel cells, cutting pollution and fuel consumption.

"In the last year, we've seen significant breakthroughs," said Federico F. Peña, the Energy Secretary, in a telephone interview. "We're going to see fuel cells in homes, cars and other uses much sooner than we had predicted."

Concerning the Latham project, Dan W. Reicher, the assistant secretary for energy efficiency and renewable energy, said, "The launch of a fuel-cell powered house is up there with the introduction of the electric refrigerator, the room air-conditioner and the fluorescent light."

"The big difference is that the fuel cell could turn the house into a full-time energy producer instead of a consumer of electricity," Mr. Reicher said.

What has made experts more optimistic is the progress scientists have made in tinkering with the fuel cell's gossamer-thin membranes, which look like plastic food wrap or aluminum foil. The membranes are crucial in facilitating a basic chemical reaction — the combination of oxygen and hydrogen to make water — into the basis of an energy revolution. W.L. Gore & Company has taken its signature product, Gore-Tex, and put it into the membranes of fuel cells, including the one in Latham, in a way that many researchers say has great promise.

David Jennings for The New York Times

A consultant, Dan O. Jones, left, checked a fuel-cell system at a house in Latham, N.Y., yesterday with the project manager, Richard Maddaloni.

Jonathan H. Leonard, the program supervisor for fuel cells at California's South Coast Air Quality Management District, one of many government agencies eagerly watching the research, said, "Splitting water into hydrogen and oxygen is a simple process that takes electricity. Combining them to make water and electricity, well, you don't get much simpler than that. I don't think there are many doubters."

Certainly not Michael M. Walsh, a mechanical engineer who is a consultant to Plug Power, the company running the Latham test. Mr. Walsh lives in the Plug Power-owned house five days a week with, among other devices, a stereo, a personal computer and a clock radio that wakes him in the morning. They will operate the same, whatever the electricity source, he said, and people inside the house "won't know whether we are running on the grid or not."

But for all the breakthroughs, fuel cells are too expensive for everyday use. Car companies, which would probably be the biggest users of a cost-effective fuel cell, say the cost is roughly 100 times more per horsepower than an internal combustion engine. Chrysler, for example, figures that each car-sized fuel-cell stack it buys costs $170,000. And running houses on fuel cells is substantially more expensive than relying on power from conventional utility plants.

Plug Power will not say what its prototype cost, arguing that the figure is about as relevant as the cost of producing the first automobile of a model year; it is astronomical but allows the production of thousands more units at lower cost. Plug Power predicts that it can commercialize fuel cells for houses by 2000, at a cost of $3,000 to $5,000 each. Detroit Edison, a part-owner of Plug Power, plans to purchase 30,000 to 50,000 units.

A New Jersey company, H-Power, also hopes for mass sales. In March the company made what it described as the first unsubsidized, fully commercial sale of a fuel cell, for a trailer-mounted highway sign, the kind that commonly warns of construction ahead. The company will supply 65 of them for $759,000.

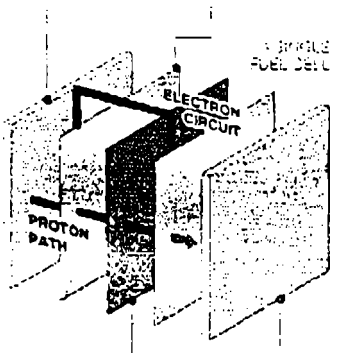
HOW IT WORKS

The Fabric Heart Of an Energy Cell

Scientists are now using Gore-Tex, the waterproof fabric used in foul-weather gear, to make ultra-thin membranes for fuel cells. Here is how a membrane functions.

Hydrogen, which is made of a proton and an electron, is channeled to the fuel cell through these panels.

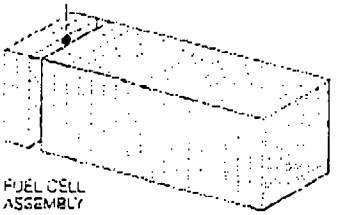
Electricity is produced when the plate strips away the electrons and directs them through a circuit.



The protons pass through the membrane. The thinner the membrane, the more easily protons pass.

Protons and electrons join with oxygen and form water.

DETAIL ABOVE



Source: W.L. Gore & Associates

The New York Times

much, but elements of the equation are changing, thanks to work being done in various laboratories. One step has been to reduce the amount of platinum, a catalyst in the chemical process, to one-fifth of former levels.

Another, accomplished by the Gore company, has been to strengthen the gel-like heart of the system. The heart, in the fuel cell used in Latham and in those being explored for cars, is a proton exchange membrane. Anything positively charged, like the proton that is the nucleus of a hydrogen atom, jumps from one side of the membrane to the other.

When a hydrogen atom, consisting of one proton and one electron, is pressed against the membrane, the proton goes through and the electron does not. That creates a positive charge on one side of the membrane and a negative charge on the other; wire them together, and electricity flows.

DuPont's membrane, sold under the trade name Nafion, does not readily transport the hydrogen ions from one side to the other until it is wet. It takes time for the water that is produced to suffuse the membrane and, once it is wet, the membrane loses two-thirds of its strength. Because fuel cells are typically arranged in "stacks," with layers of membranes, fixing a flaw is difficult.

But fuel cell experts say Gore has taken a step to solve the problems of cost, fragility and start-up time. Embedding Gore-Tex, the material it sells to textile mills for use in windbreakers and caps, produces a membrane that is 20 microns, about half as thick as predecessors. It is cheaper to buy, gets wet faster, and lets protons slide through more quickly, but it is also stronger.

There are other areas for improvement. Currently, a square centimeter of membrane produces about half a watt of power. Raising the power would reduce the number of layers, the number of plates and the number of wiring connections.

The consensus among fuel cell experts is that with growing activity and the promise of mass production, the problems can be solved. People who worked on the membrane and on the problem of platinum, which is used to provide sites where the hydrogen-oxygen reaction can occur, are moving on to other troublesome components, said John B. O'Sullivan, the manager of research on distributed generation at the Electric Power Research Institute, a utility consortium in Palo Alto, Calif.

"My concern is no longer, can we make this stuff work," Mr. O'Sullivan said. "It's, can we make it work cheaply enough."

2/2

... Over Article That Questioned Starr's Comments to Reporters

A 19-page rebuttal of charges of leaks, and attacks on the integrity of the

proper to provide information like what a potential witness told an F.B.I. agent, as long as that witness had not been called before a grand jury.

The question of what was disclosed to reporters by Mr. Starr's office could be critical. It is now found ...

journalistic affirmation "We stand by our story" has been heard all over town.

For example, Mr. Brill's article chastised Jackie Judd, an ABC reporter, for saying on air that witnesses had apparently seen the President

VIDEO MONITORING SERVICES OF AMERICA, L.P.

212 West Superior Street
Chicago, IL 60610
(312) 649-1131
(312) 649-1827

New York (212) 736-2010 | Los Angeles (213) 553-0111 | Philadelphia (215) 569-4690 | San Francisco (415) 543-3261 | Detroit (810) 357-5220
Boston (617) 266-2121 | Dallas (214) 644-8886 | Washington (202) 393-7110 | Houston (713) 789-1535 | Miami (305) 576-2981
Denver (303) 861-7152 | Hartford (203) 953-1888 | San Diego (619) 544-1800

Transcript

DATE April 28, 1998
TIME 12:00-1:00 PM (CT)
STATION KSDK-TV (NBC) Channel Five
LOCATION St. Louis
PROGRAM NewsChannel 5 at Noon

Jennifer Blome, co-anchor:

Well, as we look toward the year 2000, we face greenhouse gas emissions, global warming, the depletion of natural resources.

Art Holliday, co-anchor:

Across the country, more and more utility companies are offering customers green energy or renewable choices. In a special report on energy in the year 2000 and beyond, Leanne Gregg reports from near Denver, where thousands of people are signing up to pay more to have electricity that's generated by the wind.

David Scott (Home Owner): Wind is always going to be around. I mean, the climate is going to change, but wind is going to be there.

Leanne Gregg reporting:

The Scott family in Boulder is helping light the way by signing up for Windsource, a new program offered by Public Service of Colorado.

Scott: I believe in it.

Gregg: Under the plan, the Scotts pay two dollars and fifty cents a month extra. For that, they get a hundred kilowatt hours of electricity generated by Colorado's first wind farm.

Scott: If you're looking at our environment ten years, twenty years, thirty years down the road--I mean for my kids--it's- it's a huge choice.

Gregg: Part of the reason the utility can offer power from the wind to it's customers is because of this research lab outside Boulder.

Jim Johnson (Mechanical Engineer): This is an AWT-26. (Footage of Johnson pointing at a type of wind turbine)

Gregg: Engineers and scientists under this Department of Energy project designed state of the art wind turbines.

Johnson: The wind flows over the blades just like the wings of an airplane, and when it creates lift, the lift is what causes torque in the rotor to drive the generator. And that's how the electricity is made.

Gregg: Partly because of research like this, cost of wind technology has gone down in recent years, reliability has gone up and so has customer demand. New competition within the industry will force utilities to offer customers more choices.

Andy Sulkko (Public Service Company): The most surprising part was that people were signing up a year in advance of when we're actually going to have these things operational so they were to be- sure to be on the list to get the first wind-generated electricity.

Gregg: When finished, Colorado's wind farm will look a lot like this one in California. Utility companies in several states are planning to start offering power from the wind; others will increase the amount already generated.

Federico Pena (Energy Secretary): We're finding that people are willing to support green energy because they care about the environment and they want to make a commitment to their kids for years to come.

Gregg: The Scotts and more than six thousand other customers in Colorado alone say they look forward to paying more now because of long-term gains from the wind.

Leanne Gregg, NBC News, Boulder.

Holliday: For more information on wind technology, the National Renewable Energy Lab in Golden, Colorado has a toll-free number. That number is on your screen-- 800-363-3732. They also have a Website at www.eren.doe.gov.

# # #

Utilities move prompts more restructuring

By Andrew Taylor, Utilities Correspondent

French, US and Spanish power companies yesterday triggered a further round of restructuring of Britain's hard-pressed electricity and water industries.

Eastern Electricity, owned by TXU of the US, and London Electricity, owned by Electricité de France, the world's largest power company, plan to combine the management of their neighbouring power distribution networks.

Overhead power lines and underground cables, supplying more than 5m homes and businesses, will be separately owned by London and Eastern. The combined assets are estimated to be worth £2bn ($3.2bn).

The companies said tough price cuts ordered by the energy industry regulator had prompted the venture. The partnership would allow them to cut 800 jobs, about a quarter of the distribution workforce. The companies also would bid to manage the distribution operations of other regional electricity companies.

British electricity and water companies have announced 4,000 job cuts in the three weeks since industry regulators ordered deep price cuts from next April.

Sir Ken Jackson, general secretary of the Amalgamated Engineering and Electrical Union, said yesterday: "We're very disappointed at the scale of the job losses."

Union Fenosa, Spain's third largest power company, yesterday launched a £54.2m bid for Cambridge Water. Unión Fenosa, which has no previous experience of water, wants to become a multi-utility, offering water services alongside its growing international electricity and gas interests.

Anglian Water, which earlier this year bought a 9.9 per cent stake in Cambridge, confirmed it had also bid for its much smaller neighbour. Cambridge shareholders, however, were concerned that an offer from another quoted UK water company would be referred to the Competition Commission.

Analysts expect further rationalisation and consolidation of UK utilities, particularly electricity companies, now that the full extent of the price cuts is known.

They estimate that London and Eastern will achieve annual savings of up to £50m by merging the management of their distribution networks. Other power companies are thought to be considering selling distribution businesses.

Hyder, which owns Welsh Water and the power distribution business of South Wales Electricity, said last week it planned to make further disposals to rebuild its balance sheet.

Southern Company, of the US, which this year sold the power supply business of South West Electricity to Electricité de France, is thought to be willing to sell Sweb's distribution business.

Unión Fenosa wins Cambridge Water for $88m

WAR FOR UK GRO

iits a

leading analysts to sp
that a Finalrealm
would be pitched at
253p-255p.

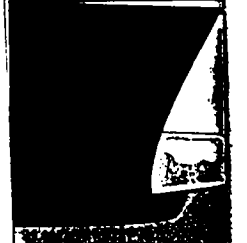
This compares wi
indicative offer of
share last week.

Burlington, the gro
up by Hicks Muse an
isco to make their bi
built an 18.6 per cent
in UB.

Schroders, lead a
and broker to Hicks M

offer f

Taking the biscu



Sales: £241.2m
Operating profit: £3.7m
Brands: Le BN, Delacre

Sales: £247.8m
Operating profit: £30.6
Brands: Penguin, Jaffa
Cakes, Hob Nobs

Source: company
Graphic by Paul Slater

rough the night, led
reement which w
fore the UB boa
ednesday.
Advisers from Sch
d Merrill Lynch, wh
pointed to advise
se in October, were
rk with counterpa
hman Brothers
Warburg Dillon Read