CONGRESSMAN'S REPORT

MORRIS K. UDALL • 2d District of Arizona

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THE ENERGY CRISIS -- WHAT WE CAN ALL DO ABOUT IT

In my last newsletter I expressed my belief that the energy crisis facing America is real, is serious and will affect each of us in one way or another.

Since this crisis faces everyone, I have gathered together suggestions on what can be done by everyone from private citizens to the federal government.

THE FAMILY

The family is still the basic social unit of the United States. And it is still the basic unit of consumption. And its consumption of energy -- electricity and petroleum -- has increased at an unprecedented rate over the past 25 years.

At the end of World War Two, most families used electricity to light a house and to power some basic labor saving appliances. A quick glance over at Table I will show the kinds of appliances in common use 25 years ago.

* In 1945 less than half of America's families owned cars. Today, more than half own two cars.

* The per capita use of electricity in the U.S. has increased 250% since 1950.

Now glance at Table II. The devices listed here are found in many of today's homes. Only by some stretch can many of them be called labor saving. They save seconds or minutes instead of days or hours. The second major characteristic of these appliances is that they gobble up much larger chunks of electricity than their Table I ancestors.

One of the basic ironies of the energy crisis seems to be that the less important the need, the more energy required to fill it.

An indication of the spread of luxury appliances is in Table III. In some cases, these appliances may be necessary, but most of the time there are other ways to accomplish the same end with less energy use.

In order to understand the energy crisis, we must start to think about the amount of energy -- watts of electricity, gallons of gasoline -- that we use.

Is it worth driving half as many miles in order to drive the bigger car? I am not suggesting that everyone must go out and buy a tiny car. But this is the kind of question that we must ask ourselves to understand the energy crunch we are facing. They are not easy questions, or pleasant, but they are important.

All right, here are some things you and your family can do right now to stop energy waste. They are simple, yet effective.

In your house:

* Turn your thermostat to 72 degrees and leave it there, year around. You'll see the difference in your utility bill.

* Be sure that doors and windows are closed when heating or cooling.

* Add storm doors and windows in severe weather. The added insulation will save fuel.

* When using appliances such as washing machines, clothes dryers, and dishwashers be certain they are fully loaded. An empty machine uses nearly as much power as a full one.

* Turn off lights, radios, TV sets when room is empty.

* Use fluorescent light whenever possible. A 50 watt fluorescent light produces three times or more the light of a standard 50 watt bulb.

* Operate major appliances early in the morning or late at night during peak electric load use seasons to reduce or avoid peak electric loads (see graph).

TABLE I: COMMON APPLIANCES OF THE 1950s

APPLIANCE	WATTAGE RATING
Small Refrigerator (12 Cu. ft.)	241
Radio	71
Clock	2
Heating Pad	65
Food Mixer	127
Electric Fan	88
Washing Machine (wringer type)	286
Black and White Television	237

Source: Federal Power Commission

TABLE II: COMMON (Luxury) APPLIANCES OF THE 1970s

APPLIANCE	WATTAGE RATING
Air Conditioner (room size)	1,566
Refrigerator- Freezer (14 Cu. ft. frost free)	615
Color Television	332
Electric Range	12,207
Washing Machine (automatic)	512
Coffee Maker	894
Broiler	1,436
Dishwasher	1,201
Food Waste Disposer	445
Food Blender	386
Clothes Dryer	4,856

Source: Federal Power Commission

By being energy conscious and carefully using appliances to their best efficiency, by adding a minimal amount of insulation and by accepting a few extra degrees of summer heat or winter cold it is possible to reduce home energy consumption by 25% or more.

In your car:

* Drive less. This is the simplest and quickest way to reduce auto costs and gasoline consumption. The cost of a bicycle will easily be amortized over a year or two of reduced driving especially the short trips that are hard on your car and use significantly more gas per mile than longer trips.

* Equip your car with steel belted radial tires. Although expensive, these tires will add about 10% to your gas mileage, according to the Environmental Protection Agency.

* Turn off your auto air conditioner as much as possible. This one accessory can reduce your gas mileage from 5% to a whopping 20%, according to EPA.

* If you are thinking about buying another car, BUY SMALL. EPA mileage tests showed that lighter cars consistently went farther on a gallon of gas than heavy cars. By careful shopping, it is possible to find autos that offer enough space for a family, reasonable safety and good gas mileage. Remember that an automatic transmission penalizes you the same number of miles per gallon as the mandatory smog control device. Is it worth losing almost one gallon in ten to let the car shift for itself?

* A 1958 Chevrolet Impala weighed 4,000 pounds. A 1973 Impala weighs 5,500 pounds. The '73 model uses almost half again as much gas (43.4%) as its lighter ancestor.

* Other factors such as traffic, length of trip, and condition of car affect gas mileage. Sudden starts and stops increase your fuel use.

INDUSTRY

It is becoming clear that industry and commerce have had a major role in creating the energy crisis, and they, like the rest of us, must take some responsibility for ending it.

* More than two thirds (68%) of all energy used in the United States is consumed by industry and commerce.

The area most easily attacked by industry, and most easily corrected, is waste. In the 1920s and 30s water was treated as an inexhaustible resource, and many plants kept gushing faucets running day and night. But as we became aware that sources of pure water were limited, industry began to survey its water use and discovered that much of the water it used was not needed.

Today, many of these fountains have become trickles with no adverse effect on industry.

* Electric use surveys similar to those water use surveys could pinpoint areas of waste and either correct them immediately or plan to replace the offending machine with something more efficient when it breaks down.

* Much waste can be dealt with immediately. On a recent trip home I visited a copper mine that was brilliantly lit with dozens of high intensity lights. The only problem was that in mid-afternoon even these lamps could not compete with the Arizona sun. Although they were adding nothing to the mine, the lights continued to burn 24 hours a day using hundreds or thousands of watts of electricity that might be needed elsewhere.

* Probably no single use of electricity is more offensive or unnecessary than the forest of electric signs which disgrace our major streets and highways. In many cities they burn night and day. New signs should be prohibited and old ones phased out.

* I want to note that Tucson Gas & Electric Co. has recognized a problem in its own backyard and turned off the floodlights that used to illuminate its downtown office building. This of course is symbolic, but symbols of this kind are important as an indication of commitment to change.

Electric utilities and major users can work together to reduce peak-hour demand. One copper mine or large factory can use as much power as a city. Utilities build their generator capacity to take care of their "peak load." That means that for several hours a day during the peak (summer) season and several months of the year (mid-October to mid-April) much of a company's generating capacity is unused. (see graph)

But the consumer still pays for the idle generators as demonstrated by recent Arizona electric rate increases to pay for new plants and equipment.

PERCENT OF U.S. FAMILIES OWNING LUXURY ELECTRIC APPLIANCES

APPLIANCE	1960	1965	1970
Electric Range	37.3	42.4	55.5
Water Heater	18.9	23.4	31.6
Freezer	23.4	27.2	31.2
Air Conditioner	15.1	24.2	40.6
Clothes Dryer	19.6	26.4	44.6
Dish Washer	7.1	13.5	26.5
Waste Disposal	10.5	13.6	25.5

Source: Federal Power Commission

Some suggestions for utilities and their major customers:

* Utilities can refuse to sell to industry during peak periods, or sell on an interruptible basis only.

* Utilities could adjust rate schedules to penalize peak period with higher rates, thus spreading use through the day and reducing the need to build new power plants.

* Industry could adjust production schedules to coincide with off-peak hours and months. Perhaps a rate incentive could be arranged to encourage power use at times when more is available.

* Unions could cooperate with management to develop work schedules and wage and hour agreements to take advantage of low power use periods. Perhaps a changeover to night production or increased winter hours and decreased summer hours.

Some other suggestions for industry:

* Design products that are energy efficient instead of energy wasteful.

* Build products to last as long as possible.

* Detroit has not yet done as well as it must in providing satisfactory, economical, low cost transportation. And while failing on this front, has increased both cost of purchase and cost of operation on its big cars. How about smaller, less expensive, more economical American cars?

* According to the Environmental Protection Agency, diesel engines are available that both meet the 1975 pollution standards and use substantially less fuel than today's gasoline engines. EPA projects that a switch to this diesel engine could reduce crude oil imports to the United States to the levels of the 1960s. This seems to be worth further exploration.

The profits shown so far this year by many major corporations are up 50% and more. And much of this higher profit stems from production of goods that require a large investment of energy to produce and a continuing large investment of energy to operate.

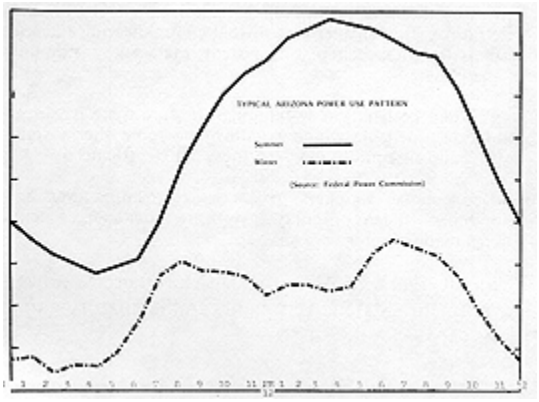
Perhaps it is time for these companies to begin asking themselves if the cost we are all paying in energy, in inflation and in a devalued dollar is worth the increasing profit of energy gluttony.

Perhaps there are places where a return to human labor is indicated. There are six million unemployed Americans. In the long run, it might be cheaper to employ some of them than to plug in a machine.

GOVERNMENT

Government, local, state and federal, is perhaps the biggest "business" in America. Combined, the various governmental bodies can exert a powerful influence over the rest of society through example and through economic impact.

If government, in its purchasing programs, becomes energy conscious as well as cost conscious, it will greatly influence American society.



There are three increasingly severe courses of action available to government at all levels: example, economic pressure, law.

Let's look at these one at a time. First, example.

* TURN OFF THE LIGHTS. This may seem trivial, but government buildings all over the country are brilliantly lit 24 hours a day, occupied or not.

* Light according to need. Hallways don't require as much light as work areas. Buildings on the average have four to five times as much light today as a generation ago.

* Use less air conditioning and heat. Try spotting plants around offices as air fresheners. Open windows whenever possible instead of using heaters or coolers.

* Plant ivy and vines on the outsides of buildings and shade windows whenever possible. The combination of natural plant insulation and shaded windows can reduce inside temperatures (and air conditioning needs) significantly.

* Repair instead of replacing. If energy costs are figured, it may be cheaper to repair a machine or vehicle than to buy a new one.

* Have employees walk (or ride bicycles) on short trips.

* Encourage car pools or use of public transit by as many employees as possible. Explore incentives such as reduced work days for those riding transit or car pools. Reduce or charge for employee parking places.

* Set work schedules for shops (and other high energy use departments) to coincide with off-peak hours of electric use.

* Explore staggered shifts to help alleviate both peak loads and rush hour traffic.

* Explore a four day week to help alleviate peak loads, rush hour traffic and reduce commuting cost by 20%.

Now economic pressure. Government purchasing makes up the largest single block of purchasing power in the country. Government could use this power to encourage energy conservation.

* Buy the most energy efficient device available. Check wattage ratings. Buy smaller cars. Install central heating and cooling systems (or total recirculating systems that make maximum use of energy).

* When designing new buildings, be sure there is: sufficient insulation, openable windows, individual room thermostats for heating and air conditioning. All these cut electric needs.

* Encourage suppliers to encourage manufacturers to develop more efficient products. Investigate other sources including foreign manufacturers.

Finally, let's look at the legal or coercive power of government. State governments and regulatory commissions can:

* Change utility rate structures. Today the largest user pays the lowest rate. We should charge more for more, not less.

* Change utility rate structures to penalize peak period use. Add a surcharge to electricity used during peak hours.

* Change utility rate structures to reward customers who use power at off-peak times. The telephone company lowers its rates from dusk to dawn, there is no reason why utilities cannot encourage similar off-peak use. And there is no reason why rate commissions cannot help them along.

* Don't penalize yourself in the name of "progress." Some states and counties seek to attract industry through reduced taxes and other incentives. Be sure these incentives are tied firmly to a strong program of energy conservation and efficiency. There is no point in giving a company a tax break in order to let it increase everyone's utility rates.

The federal government can make immediate contributions to energy conservation by following the steps recently taken by the Post Office. This agency has ordered its employees to drive slower and turn off engines between stops. It is estimated that a one percent reduction in fuel use for the agency's 100,000 vehicles will save **857,000** gallons of gasoline per year.

* The Air Force, Navy and Army can cut out unnecessary training flights. Officers who rarely fly anything but a desk should be discouraged from flying trips to nowhere just to draw flight pay.

* All the services can examine training programs for energy waste. Can the troops hike to the firing range instead of riding in trucks?

* The Navy can become both energy and environment conscious at the same time. Globs of spilled oil cover much of our coastal waters, and much of that oil comes from Navy ships cleaning their fuel tanks or carelessly letting hoses pump into the sea after fueling is completed.

But government will have to take other action to see this crisis through and prevent its recurrence in a few years.

Research:

* Legislation is pending before my Environment Subcommittee to establish several public-private research corporations similar to COMSAT to seek solutions to America's energy problems. They would work in several areas such as coal and petroleum technology.

* The Congress can increase appropriations for research in solar energy and geothermal steam. Both of these are renewable and potentially non-polluting sources of energy. Although the budget for solar energy research next year may be as high as $24 million, that is barely enough to get off the ground.

Finally, the Congress can simply make it illegal to waste energy, or at least so expensive that we will think about it before buying a huge car or some other device that uses more energy than necessary.

* Horsepower, weight and watt taxes can be imposed for items which are especially energy costly.

* Tax incentives can be offered for car pooling, riding mass transit, driving a smaller car. For years we have been rewarding those who produce more, let's start rewarding those who use less. The depletion allowance and other tax breaks have become standard for those in the energy production business. Let's start encouraging people to get into the energy conservation business.

* Require that airlines combine flights leaving at the same time from the same place for the same destination if both are less than half full.

* Require that utilities (under the jurisdiction of the Federal Power Commission) spend at least as much for research as they do for advertising. In 1969, the industry spent $320 million for ads, $41 million for research.

* Refuse to allow the cost of advertising to be included in electric utilities' rate base. Why should we pay utility rates based in part on the costs of a monopoly encouraging us to use its product?

* Be sure that domestic needs are met before exporting petroleum. If an Alaska pipeline is built, it should be to supply our petroleum needs, not Japan's.

This, of course, is not a comprehensive list of all ways to save energy, but I think these suggestions can point us in the right direction and make us more conscious of energy use.