

The original documents are located in Box 6, folder “Nonreturnable Beverage Containers” of the Norman Ross Files, 1974-75 at the Gerald R. Ford Presidential Library.

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FEDERAL ENERGY ADMINISTRATION

WASHINGTON, D.C. 20461

April 24, 1975

OFFICE OF THE ASSISTANT ADMINISTRATOR

Bo Hies
& CANS

NOTE TO GLENN SCHLEEDE

Glenn,

This is less strong than I remembered, so it
may not be very helpful.

Roger

Roger W. Sant

Attachment



4/24

STATEMENT OF
ROGER W. SANT
ASSISTANT ADMINISTRATOR
FOR
ENERGY CONSERVATION AND ENVIRONMENT
FEDERAL ENERGY ADMINISTRATION

BEFORE THE
SUBCOMMITTEE ON TRANSPORTATION AND COMMERCE
COMMITTEE ON INTERSTATE AND FOREIGN COMMERCE

U.S. HOUSE OF REPRESENTATIVES

APRIL 15, 1975



Mr. Chairman and Members of the Subcommittee on Transportation and Commerce, I appreciate the opportunity to appear before you today to discuss H.R. 5487, H.R. 406 and the energy conservation aspects of solid waste.

Before I discuss these subjects in detail, however, I would like to provide a brief overview of the Nation's energy dilemma and a summary of the President's legislative initiatives.

Last year's oil embargo demonstrated our Nation's vulnerability to foreign supply cutoffs. The embargo was one result of years of energy neglect which left our economy and its relationship with other nations subject to foreign influence, sudden disruption, and devastating price increases.

The problem can be seen by examining several trends in the Nation's energy situation.

First, and of fundamental concern to us here today, is that the Nation's demand for energy has been growing at a rate of 4.5 percent annually for the last several years. Demand for petroleum products has increased at an even more alarming rate.



Second, our domestic supplies of petroleum and other fuels have not kept pace with this increasing demand. In fact, domestic production of crude oil peaked prior to 1970 and has been declining ever since.

Third, and perhaps most importantly, the gap between domestic demand for energy and domestic supplies has been filled by an increasing reliance on imported petroleum. In 1960, the United States imported only 15 percent of its petroleum requirements. By 1973, this figure had grown to 35 percent or 6 million barrels per day. And in 1974, even accounting for the reduced consumption caused by the embargo and last year's price increases, our imports grew to 38 percent of our total consumption, or 6.4 million barrels per day. If this trend continues unaltered, our projections indicate that by 1985 we will import up to 12.7 million barrels per day, or more than half our oil needs.

Clearly, our Nation's deteriorating energy situation requires broad, decisive and prompt government action to prevent continued erosion of our economy and national security. Reducing our vulnerability to supply interruption and price manipulation must be given the highest priority.



The President has prescribed tough action to cure our energy ills. He has outlined three time phased goals.

One: In the short-term, a cut in our oil imports of one million barrels per day by the end of this year and of two million barrels per day by the end of 1977.

Two: By 1985, imports of no more than three to five million barrels per day -- and the capability to immediately replace that amount from storage and standby measures in the event of a supply disruption.

Three: Accelerated development of energy technology and resources so that the United States can meet a significant share of the energy needs of the free world by the end of this century.

To meet these goals, the President has proposed several actions that would, if implemented, serve to counter the recent trend of declining domestic energy production.

In the first crucial years, there are only a limited number of actions that can increase domestic supply. We must develop and increase production from the Elk Hills, California, Naval Petroleum Reserve. The President has submitted legislation for this purpose.



The Administration has also submitted a set of comprehensive amendments to the Energy Supply and Environmental Coordination Act of 1974 to increase the number of oil burning facilities that can be converted to coal in the coming years.

In addition, the Administration has proposed a series of tax and decontrol measures. These actions will not only increase incentives to explore for and develop new energy resources, but will also encourage greater energy conservation.

For the mid-term, the President has reaffirmed the intent of this Administration to move ahead with an aggressive leasing program in those areas of the Outer Continental Shelf where the environmental risks are judged to be acceptable. He has also asked the Congress to authorize oil production from the largest of the Nation's Naval Petroleum Reserves, NPR4 in Alaska, to provide petroleum for the domestic economy, with 20% or such amounts as the President may determine earmarked for military needs and strategic storage.

But in addition to finding more oil and gas, we must take advantage of our most abundant energy resource, coal. The President has submitted surface mining legislation and



an amendment to grant the Environmental Protection Agency authority to suspend emission limitations for power plants until low sulfur coal can be obtained or stack gas scrubbers can be installed.

The Administration is also seeking an amendment to the Clean Air Act to deal with the issue of "significant deterioration" of air quality.

Finally, the President has proposed legislation to assist electric utilities through higher investment tax credits, mandated reforms in State Utility Commission practices, and other measures. And to rejuvenate our drive toward more effective use of nuclear power, we have markedly increased our budget for nuclear waste disposal and for continued improvements in safeguards.

For the long-term, the President has reaffirmed our commitment to a strong energy research and development program, aimed not only at developing the capability to tap all our major domestic energy resources but also at improving the efficiency of energy utilization in all aspects of our economy.

In conjunction with this R&D program, the President has announced a national synthetic fuels program which will entail a program of Federal incentives designed to



reduce price uncertainty, raise capital and overcome unnecessary delays in bringing existing or nearly developed technologies into commercial use.

Although each of these supply actions will contribute to the achievement of energy independence, they are not sufficient to do the job alone. Thus, an essential element of any energy strategy aimed at reducing our dependence on imported petroleum must be policies to reduce our growing demand for energy by an aggressive energy conservation program.

As I noted earlier, the President has proposed several tax and regulatory actions which would increase the price of energy relative to other products in order to achieve major energy savings in the near-term. We believe that this approach poses the least danger to our economy and is more equitable than other proposals that would achieve comparable savings.

While dampening demand through increases in the relative price of petroleum products is the only means to achieve major savings in the near-term -- short of restricting supply -- there are numerous other energy conservation programs that we feel will produce significant savings beyond 1977. For example, our Nation can greatly improve



the fuel economy of automobiles, the efficiency of home appliances, the thermal characteristics of buildings and the energy efficiency of industrial processes.

The Administration's energy program incorporates a combination of voluntary and mandatory programs directed at the achievement of major energy savings in each sector of the economy.

The President has recently announced six specific administrative and legislative initiatives. They are:

1. A 40 percent improvement in the fuel economy of new automobiles by model year 1980.
Commitments to achieve this goal have already been obtained from auto manufacturers. The President has also announced that he will seek amendments to the Clean Air Act to achieve a better balance between environmental and energy needs (Titles V and VI of S. 594).
2. A tax credit for 15 percent of the cost of installing insulation and making other energy conserving modifications to homes.
3. A winterization assistance program to install insulation, weatherstripping and caulking in homes of individuals (Title XI of S. 594).



4. A mandatory program to develop and ensure the adoption of energy conservation standards for all new residential and commercial buildings (Title X of S. 594).
5. A mandatory motor vehicle and appliance energy labeling program (Title XII of S. 594); and
6. A voluntary appliance efficiency improvement program which has a goal of obtaining the commitment of appliance manufacturers to achieving an average 20 percent improvement by 1980.

These new initiatives will complement the energy conservation programs already being implemented by the Federal Energy Administration. We believe that combining Federal efforts to improve the efficiency of energy use in new buildings, new automobiles, and new appliances with on-going voluntary programs, supported by selected incentives, to encourage immediate energy conservation will be the most effective means of achieving major energy savings.



My office is concerned with energy conservation in all sectors of the economy and for all end uses. We are particularly interested in solid waste management since energy, among other resources, is wasted every time materials are unnecessarily discarded or used in careless or frivolous ways such as overpackaging. If we can reduce the generation of solid waste materials by recycling materials, recovering energy content, or reducing waste at the source, then we can reduce consumption of both material resources and energy required for extraction and manufacture.

At present, energy recovery appears to be feasible only in more densely populated areas where economies of scale can be achieved. 25% of the Nation's waste is concentrated in 243 cities having populations in excess of 55,000, the minimum that is necessary to make resource recovery economically attractive given current dump fees and fuel costs. Using 1971 data on these cities, the Environmental Protection Agency has estimated that the equivalent of 473,000 barrels of oil per day could be saved through energy recovery (393,000 barrels per day) and materials recycling (80,000 barrels per day). Of course, this estimate assumes that practical technologies can be employed to utilize the recovered and recycled products.



The Environmental Protection Agency has made a great deal of progress toward making such technology a reality.

Waste source reduction refers to reducing waste by better resource management and design of processing and distribution systems prior to a substance becoming waste. We see this approach as the key opportunity for energy conservation in the waste management area. It seems almost axiomatic that energy will be saved in direct proportion to the amount of materials withdrawn from the waste stream--the less materials produced, the less waste. The Environmental Protection Agency estimated that if per capita packaging consumption in 1972 had been reduced to 1958 levels, over half a quadrillion BTUs could have been saved.

Packaging is not the only candidate area. Through the efforts of the Administration, the three major auto manufacturers have committed themselves to a 40% improvement in new car fuel economy over a four year period. In order to achieve these efficiencies, auto manufacturers will have to utilize two techniques that will result in less solid waste--namely, a longer lived product (radial tires) and less material (lighter cars).



Source reduction has one potential undesirable side effect, economic dislocation. Recognizing the importance of this issue, we think there is merit in the provision of H.R. 5487 which would require a study on "the feasibility, desirability, and energy conservation potential of mandatory waste generation reduction requirements."

I should like to note that source reduction has one other significant though intangible aspect: it is a fundamental theme for developing a national conservation ethic. Given our experience with voluntary conservation programs, the need for such a national ethic is obvious.

The other two approaches -- energy recovery and materials recycling -- are collectively referred to as waste resource management. Energy recovery involves extracting the heat content of waste for use as either solid or pyrolyzed fuel. Materials recycling usually refers to salvaging glass, paper, and metals for reprocessing and reuse.



An ideal system would recover both materials and energy. While in principle this can be done, in practice systems that have been developed recover either ferrous and non-ferrous metals, glass, and paper; or energy and sometimes ferrous metals. The materials recycling facility being built in New Orleans recovers metals and glass, handpicks paper to some extent, and leaves the organic combustible fraction for landfill. A large number of deep pile burning water wall incinerators throughout the country burn raw refuse to generate steam. The value of the metals and glass in the refuse that has been exposed to the high combustion temperature is degraded. It should be noted, however, that the Environmental Protection Agency has funded a demonstration grant for an incinerator residue recovery plant in Lowell, Massachusetts that will reclaim materials after the energy content of the waste has been utilized.

One very promising development is the Environmental Protection Agency demonstration with the City of St. Louis and the Union Electric Company. In St. Louis the refuse is shredded, air classified, and ferrous metals are recovered. The light combustible fraction is then used



as a supplementary fuel contributing up to 20% of the heat content in a 140 megawatt pulverized coal fired boiler. Based on Union Electric's favorable experiences with the project, they have initiated a 70 million dollar project to process 8,000 tons of refuse from the St. Louis area per day. Consideration is being given to recovery of glass and aluminum in addition to ferrous metals if feasible. This project requires that Union Electric adapt six additional boilers to burn refuse. We expect that this is indicative of the way waste resources will be managed in the future, with plants recovering both materials and energy.

Before we see widespread adoption of materials recycling, several obstacles will have to be overcome. The biggest problem is the lack of markets for products derived from waste. Part of the problem is that salvaged materials are impure and only have a limited market; but even marketing heat energy recovered as steam requires careful planning and management. Two of the newer incinerators (the Chicago Northwest and the Harrisburg, Pennsylvania plants) currently condense the steam they generate from refuse and hence unproductively dissipate the energy they recover for lack of a market. Markets



frequently exist only for particular recovered products--materials or energy--at specific sites. This is one reason that recovery plants have been built to recover either materials or energy.

Based on past experience, it is essential that markets for recycled materials be developed in conjunction with construction of materials recycling plants. Failure to do so could lead to an overabundance of low-grade recovered materials, which could saturate the market. Some materials recycling plants that were developed in previous decades failed because they were unable to find adequate markets for their products. The compost plants that were operated in the 1950's and 1960's were classic examples. Of the 18 plants composting municipal waste built since 1951, only one was operating full time in 1973 and four others were on a demand only basis. While there were many reasons for the closings, the primary factors were non-competitive operating costs and lack of substantial markets.

Productively utilizing the latent energy in the organic fraction is the key to success. It is estimated



that in a plant recovering both energy and materials, from 1/2 to 2/3 of the revenue derived from sale of recovered products and 80 to 90 percent of the energy saved are associated with the fuel fraction.

Currently only two demonstrated technologies for recovering energy from solid waste are commercially available in the United States: first, burning the refuse in a water wall incinerator to generate low temperature steam which can be used for space conditioning or industrial process steam; and second, using shredded and air-classified refuse as a supplementary fuel in a boiler fired by pulverized coal. Because of traditionally higher fuel costs and lack of available land for disposal of wastes, recovery of energy from refuse is an established practice in Europe. The European approach, which utilizes separate combustion chambers for the refuse and fossil fuel, demonstrates the feasibility of using refuse as fuel although the technology is less sophisticated than the combined firing of refuse and coal being demonstrated in this country. In 1973 there were 16 powerplants in West Germany operating that used refuse as a fuel in some part of the steam cycle. Frankfurt derives 7% of its electrical energy from such systems.



Other even more advanced technologies such as gas and oil pyrolysis are being developed but the amount of operating data will be minimal and as a result they probably will not be implemented to any degree within the Fiscal Year 1979 timeframe that H.R. 5487 considers.

Given the current state of the art, using refuse as a supplementary fuel in a utility or large industrial boiler is the preferred technology. There are two reasons. First, marketing steam derived from refuse has not been easy in many cases. Second, when refuse is prepared for a utility-fired boiler, it facilitates recovery of materials.

However, with some exceptions, utilities have not been enthusiastic about using refuse-derived fuels even though refuse may be price-competitive with other fuels and low in sulfur content. The reasons are numerous. I'll mention just a couple. Utility boilers are built to last 40 years; and with little information on the long-term effects of burning refuse, utilities are reluctant to risk shortening the lifetime of their equipment. Some utilities are concerned that after they make necessary modifications to burn solid waste, air quality regulations will be modified so as to prohibit its use as a fuel.



In recognition of the many complex institutional barriers preventing utilization of refuse as an energy source, and in consultation with the Environmental Protection Agency, we are contracting for a study to identify and examine institutional barriers, with the primary emphasis being on utilities.

In addition, the Federal Energy Administration is participating with the Environmental Protection Agency and the Tennessee Valley Authority in a study examining the feasibility of adapting one or more of the Tennessee Valley Authority's steam plants to accept prepared refuse as a supplementary fuel. If the Tennessee Valley Authority, the largest steam utility in the country, were to adopt this practice, it would encourage other large utilities to follow.

I would like to acquaint you with three other areas that relate directly to resource recovery -- industrial energy conservation, utilization of agricultural wastes, and disposal of waste oil.

Our industrial energy conservation program has been working with the aluminum, cement, chemical, paper, petroleum refining, steel, glass, copper, meat packing and baking industries to develop energy conservation goals including recycling. The goals are defined in terms of energy use per unit of output. One way in



which industry may elect to meet these goals is by utilizing recycled materials.

Agricultural residues contain significantly more latent energy than urban wastes. Most agricultural waste is quite dispersed and much of it is unavailable from energy and economic standpoints. However, given the large volume of agricultural wastes, utilizing even a small percentage of it as an energy source would be significant. Therefore, the Federal Energy Administration is participating with the National Science Foundation and the Department of Agriculture's Agricultural Research Service in a series of studies examining the technical and economic feasibility of utilizing selected agricultural wastes as energy sources.

Each day 70,000 barrels of waste lubricating oil are generated. Presently only 8 percent of this oil is being re-refined -- the most valuable use for this oil. The remainder is used as a lower grade product or disposed of in an environmentally unsatisfactory way. Forty-three percent of the waste oil is used as fuel, 18% is used as a road oil or in asphalt, and 31% is dumped. Because there are no technological barriers to recycling waste oil and considering the economics of various collection and recovery



systems, the Federal Energy Administration believes that improved use of the waste oil is possible and regards improving use of this resource as an important opportunity for energy conservation.

I will now turn to the specific legislation the Committee is considering. H.R. 406 would require a mandatory deposit on all soft drink and beer containers.

Based on data generated in a recent Environmental Protection Agency Study, it has been estimated that approximately .2 quadrillion BTU per year would be saved if one way beverage containers were eliminated.

Estimates of the economic dislocations associated with enactment of this legislation are less well understood. A 1972 study sponsored by the Environmental Protection Agency estimated approximately 82,000 jobs would be lost if one way containers were suddenly eliminated. The number of jobs lost would be appreciably less if the legislation before you contained provisions for a phase in period. Somewhat balancing the lost jobs would be the number of jobs created to handle the returned bottles.



It has been estimated that the number of jobs created would be about equal to the jobs lost, but that the jobs created would require less skill and hence be lower paying.

In our opinion the work that has been done to date evaluating the impact of container legislation needs to be extended. This extension should include the impact of new technology in container production, the possibility that not all one way containers will be eliminated, economic impact on resource recovery, and the economic requirements for industrial changeover.

Therefore, the Federal Energy Administration has contracted with Research Triangle Institute to analyze a number of questions relating to this legislation. Because of the diversity of opinion on the issue, one specific task of the study will be to circulate a draft version of the final report to interested parties (industry, environmental and consumer groups) for critical review. All comments will be bound with the report. Thus the Federal Energy Administration hopes to have in one document all shades of opinion on which to base its recommendations.



It is anticipated that the report will be completed and reviewed by mid August 1975. At that time the Federal Energy Administration will be in a more knowledgeable position to comment on legislation directed at the non-returnable container. Therefore we prefer not to indicate support or non-support of H.R. 406 at this time.

With respect to H.R. 5487, the "Waste Control Act of 1975," we wish to indicate the following concerns: (1) would an authorization of 440 million dollars in grants and loans materially increase the energy conserved? Realization of the total energy potential would require private and public investment of 5 to 10 billion dollars. (2) What marketing considerations should be taken into account to assure that studies and grants have realistically addressed the productive use of the energy and materials recovered? (3) What if any institutional, regulatory, and economic barriers to the reuse of recycled materials need to be eliminated? (4) What methods, if any, should be employed to protect markets for the low grade materials which result from waste/energy recovery?, and (5) How much additional attention must be given to the development and proving of the technology for waste/energy recovery? Programs

which include energy cost/benefit analyses are a necessity for long range decision making by the private sector and governments.

Implicit in these concerns is lack of knowledge about whether it is necessary to invest Federal money in energy recovery facilities in light of the increasing costs of energy and waste disposal. A number of facilities have been or are being planned to be built using strictly private financing.

In total, because of the economic, technical and institutional risks at this time associated with resource recovery, it is not clear what if any Federal subsidies will be required to increase significantly the amount of energy saved or recovered from the solid waste stream. While we recognize that H.R. 5487 is primarily concerned with waste management, we feel that technological developments and marketing strategies have important implications for both solid waste and energy.



We strongly support all studies called for by the bill with the exception of the study called for by Section 276-6-C dealing with recovery and use of methane from residential waste vent stacks which we feel is unnecessary. We believe that an additional study which would focus on the impact of government subsidies should be performed before substantial sums of federal money are expended on energy recovery from solid waste.

Finally, we recognize that the main emphasis of the bill is developing an environmentally acceptable ways of disposing of the Nation's solid waste. On this subject we defer to the Environmental Protection Agency.

I will be happy to answer any questions.

