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TESTIMONY
OF
FRANK G. ZARB
ADMINISTRATOR
FEDERAL ENERGY ADMINISTRATION

BEFORE THE
COMMITTEE ON BANKING, HOUSING, AND URBAN AFFAIRS
UNITED STATES SENATE

ENERGY INDEPENDENCE AUTHORITY

APRIL 12, 1976



MR. CHAIRMAN, MEMBERS OF THE COMMITTEE: THE VICE PRESIDENT PROVIDED YOU WITH AN EXCELLENT OVERVIEW OF THE NEED TO ACT BOLDLY AND EXPEDITIOUSLY TO REVITALIZE OUR DOMESTIC ENERGY PRODUCTION ACTIVITIES AND, IN THE PROCESS, ATTAIN AN ASSURED DEGREE OF SELF-SUFFICIENCY. I WOULD LIKE TO TURN NOW TO A MORE DETAILED ASSESSMENT OF THIS NATION'S ENERGY NEEDS AND THE ADMINISTRATION'S PROPOSALS TO ACHIEVE THE GOALS WHICH THE VICE PRESIDENT JUST DESCRIBED.

THE NATIONAL ENERGY OUTLOOK (NEO) RECENTLY PUBLISHED BY THE FEDERAL ENERGY ADMINISTRATION CLEARLY INDICATES THAT THE UNITED STATES MUST MAKE A SUBSTANTIAL COMMITMENT OF POLICY AND PROGRAMS TO ACHIEVE ENERGY INDEPENDENCE. AS THE VICE PRESIDENT DESCRIBED IT, JUST TO MAINTAIN CURRENT IMPORT LEVELS OF ABOUT SIX MILLION BARRELS A DAY, THE NATION MUST ACCELERATE ITS ENERGY PRODUCTION IN ALL FUEL SECTORS.

- DOMESTIC CRUDE OIL PRODUCTION MUST INCREASE FROM 8.4 MILLION BARRELS A DAY TO ABOUT 12.3 MILLION BARRELS BY 1985. THIS IS AN INCREASE OF ALMOST 50 PERCENT, EVEN THOUGH CURRENTLY PRODUCING ONSHORE RESERVES WILL DECLINE TO 2.4 MILLION BARRELS A DAY BY 1985, AS THE OLDER FIELDS ARE DEPLETED. NEW SUPPLIES WILL HAVE TO

- COME FROM THE OUTER CONTINENTAL SHELF AND ALASKA, WITH SYNTHETICS CONTRIBUTING VERY LITTLE IN THE ABSENCE OF FINANCIAL ASSISTANCE FROM THE FEDERAL GOVERNMENT.
- NATURAL GAS PRODUCTION MUST GO OVER 22 TRILLION CUBIC FEET BY 1985, AS COMPARED TO THE 20 TRILLION CUBIC FEET TOTAL WE WERE ABLE TO PRODUCE IN 1975, AND THE PROJECTED 17.9 TRILLION CUBIC FEET IN 1985 UNDER CONTINUED REGULATION. MOST OF THIS NEW GAS PRODUCTION WILL COME FROM THE GULF OF MEXICO AND INTENSIVE ONSHORE ACTIVITIES. ALASKAN GAS, LIQUIFIED NATURAL GAS, AND SYNTHETIC GAS COULD ALSO SUPPLEMENT THE 1985 SUPPLY.
 - COAL PRODUCTION, 640 MILLION TONS IN 1975, MUST GO OVER ONE BILLION TONS BY 1985, WITH MOST OF THE EXPANSION COMING IN THE WESTERN UNITED STATES.
 - NUCLEAR POWER'S SHARE OF ELECTRIC POWER GENERATION WILL HAVE TO INCREASE TO ABOUT 26 PERCENT, AS COMPARED TO 1975'S 8.6 PERCENT. THIS EXPANSION WILL HAVE TO OCCUR DESPITE REDUCED DEMAND GROWTH FORECASTS, DELAYS IN SITING, AND FINANCIAL DIFFICULTIES OF MANY ELECTRIC UTILITIES.
 - AN EXPANDED COMMERCIAL DEMONSTRATION EFFORT FOR SYNTHETIC FUELS TECHNOLOGIES MUST BE IN PLACE BY 1985. UNLESS CONSTRUCTION OF SYNTHETIC FUELS PLANTS IS STARTED NOW AND PROVEN COMMERCIALY VIABLE BY 1985, IT WILL NOT BE POSSIBLE

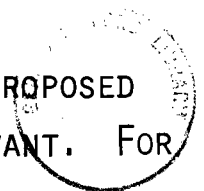
FOR THESE NEW ENERGY SOURCES TO REPLACE DWINDLING SUPPLIES OF OIL AND GAS IN THE POST-1985 PERIOD.

- LASTLY, BUT EQUALLY IMPORTANT, WE MUST CONTINUE AND EXPAND OUR CURRENT EFFORTS TO CONSERVE ENERGY USE IN AUTOMOBILES, HOUSEHOLDS, COMMERCIAL BUILDINGS, AND INDUSTRY.

EACH OF THESE ELEMENTS, AS YOU CAN SEE, IS A MASSIVE PROGRAM IN ITSELF, AND ALL OF THEM MUST WORK IN CONCERT WITH EACH OTHER IF WE ARE TO REACH THAT SIX MILLION BARREL PER DAY IMPORT FIGURE BY 1985. QUITE CANDIDLY, ALL OF THESE THINGS WILL NOT HAPPEN BY THEMSELVES. ALL MUST OCCUR WITHIN THE BOUNDS OF CERTAIN CRUCIAL ASSUMPTIONS:

- THERE MUST BE A PHASED PRICE DEREGULATION OF OIL AND NATURAL GAS.
- THERE MUST BE A RESOLUTION OF THE UNCERTAINTIES TO PERMIT THE ORDERLY DEVELOPMENT OF COAL.
- THERE MUST BE NO MAJOR RESTRICTIONS IN THE GROWTH OF NUCLEAR POWER.
- THERE MUST BE ADEQUATE FINANCING AVAILABLE.
- THERE MUST BE A STREAMLINING OF THE REGULATORY PROCESS TO ELIMINATE UNNECESSARY DELAYS IN BRINGING NEW ENERGY DEVELOPMENT ON LINE.

IT IS ON THIS LAST POINT THAT A DISCUSSION OF THE PROPOSED ENERGY INDEPENDENCE AUTHORITY IS PARTICULARLY RELEVANT. FOR



THE FORECASTS WE HAVE PRODUCED ASSUME THAT FINANCING WOULD BE AVAILABLE FOR THE ENERGY PROJECTS WHICH WE SHALL NEED IN THE NEXT DECADE AND BEYOND.

FULLY \$580 BILLION (IN 1975 DOLLARS) IN ENERGY SUPPLY INVESTMENTS ARE EXPECTED TO BE NEEDED IN THE NEXT TEN YEARS. THIS REPRESENTS ABOUT 30 PERCENT OF FIXED BUSINESS INVESTMENT, WHICH IS CLOSE TO ENERGY'S HISTORICAL SHARE. INVESTMENTS TO INCREASE ENERGY EFFICIENCY AND PROMOTE CONSERVATION COULD ALSO ADD THE SIGNIFICANT AMOUNT OF MORE THAN \$200 BILLION TO THE TOTAL NEEDED THROUGH 1985.


NOW MOST ENERGY PROJECTS SHOULD AND WILL BE FINANCED FROM CONVENTIONAL PRIVATE SOURCES, BUT THERE WILL BE OTHERS IN SELECTED ENERGY SECTORS THAT WILL ENCOUNTER FINANCIAL DIFFICULTY.

FOR EXAMPLE, ELECTRIC UTILITIES, WHOSE SPENDING WILL HAVE TO ALMOST DOUBLE IN THE NEXT TEN YEARS, CAN BE EXPECTED TO CONTINUE TO HAVE SERIOUS DIFFICULTIES IN RAISING CAPITAL UNLESS FURTHER CHANGES ARE FORTHCOMING ON A TIMELY BASIS TO PROVIDE ADEQUATE RATES AND STRONGER EARNINGS. THIS INDUSTRY IS NOW AND WILL CONTINUE TO BE THE MOST INTENSIVE USER OF THE CAPITAL MARKETS TO FINANCE EXPENDITURES - AND ON A REVENUE BASE WHICH IS LESS THAN HALF OF THAT OF THE OIL COMPANIES. IN ADDITION TO NEW OUTLAYS, THE ELECTRIC UTILITY INDUSTRY WILL

NEED ADDITIONAL CAPITAL TO BRING ABOUT THE REPLACEMENT OF OIL- OR GAS-FIRED PLANTS, OR TO PROMOTE A NEWER TECHNOLOGY AT A FASTER PACE, SUCH AS DUAL-PURPOSE STEAM AND ELECTRIC PLANTS.

IT IS ALSO CLEAR THAT IF THERE IS TO BE DEVELOPMENT OF A COMMERCIALY VIABLE SYNTHETIC FUELS INDUSTRY, SOME DIRECT FEDERAL FINANCIAL STIMULUS WILL BE REQUIRED. MOST OF THESE TECHNOLOGIES ARE CAPITAL INTENSIVE - GENERALLY EXPECTED TO RUN ONE BILLION DOLLARS PER PLANT TO PRODUCE HIGH COST ENERGY. WITH CONTINUED UNCERTAINTY OVER WORLD OIL PRICES, INVESTORS ARE RELUCTANT TO COMMIT ONE BILLION DOLLARS TO BUILD A PLANT WHOSE OUTPUT PRICE WILL NOT BE IMMEDIATELY COMPETITIVE WITH THE WORLD PRICE OF CRUDE OIL. FURTHERMORE, THE RISK OF COMMERCIALIZING THESE TECHNOLOGIES IS COMPOUNDED BY THE UNCERTAINTY OVER HOW WELL THE TECHNOLOGY WILL WORK; THIS MAKES THE INVESTMENT IN ENERGY TECHNOLOGIES AND SUPPLY DEVELOPMENT PROCESSES ALL THE MORE DIFFICULT.

THE COAL INDUSTRY, WHICH WILL HAVE TO TRIPLE ITS INVESTMENTS IN THE NEXT TEN YEARS, MAY NEED SPECIAL PROJECTS TO SUPPORT REGIONAL MINING DEVELOPMENT OR BETTER ENVIRONMENTAL TECHNOLOGIES. INVESTMENT REQUIREMENTS IN COAL TRANSPORTATION, INCLUDING SUCH SYSTEMS AS SLURRY PIPELINES, COULD MAKE IT DIFFICULT TO ACHIEVE PRODUCTION OBJECTIVES.



CONSERVATION INVESTMENT ACTIVITIES INCLUDE, FOR EXAMPLE, A STRATEGY OF ENCOURAGING ELECTRIC UTILITY LOAD MANAGEMENT. SUCH PROJECTS AS POSITIVE LOAD CONTROL SYSTEMS AND TIME-OF-DAY METERING EQUIPMENT, COULD RESULT IN SUBSTANTIAL BENEFITS IN BOTH ENERGY AND FUTURE CAPITAL SAVINGS.

INVESTMENTS IN URANIUM MINING, MILLING, FABRICATION, AND WASTE MANAGEMENT - COMBINED KNOWN AS THE NUCLEAR FUEL CYCLE - MUST SUPPORT THE EXPANSION OF NUCLEAR CAPACITY. THESE ACTIVITIES ARE EXPECTED TO REQUIRE ON THE ORDER OF \$2 BILLION OVER THE NEXT TEN YEARS.

IT IS IN THE CONTEXT OF THESE CIRCUMSTANCES THAT THE ENERGY INDEPENDENCE AUTHORITY HAS BEEN PROPOSED. ENERGY INDEPENDENCE WOULD BE AIDED THROUGH LOANS, LOAN GUARANTEES, AND OTHER FINANCIAL ASSISTANCE TO PRIVATE SECTOR ENERGY PROJECTS. THE EIA LEGISLATION IS DESIGNED TO ASSURE THAT OUTLAYS WOULD BE RECOUPED BY THE GOVERNMENT. COOPERATION WITH PRIVATE SECTOR FINANCING WOULD BE UTILIZED TO A GREAT EXTENT. THE AUTHORITY WOULD HAVE A LIMITED LIFE OF TEN YEARS. FINANCIAL RESOURCES WOULD TOTAL \$25 BILLION OF EQUITY AND \$75 BILLION OF DEBT. IT WOULD ONLY SUPPORT THOSE PROJECTS WHICH WOULD CONTRIBUTE DIRECTLY AND SIGNIFICANTLY TO ENERGY INDEPENDENCE AND WHICH WOULD NOT BE FINANCED WITHOUT GOVERNMENT ASSISTANCE. THE VICE PRESIDENT HAS ALREADY DESCRIBED FOR YOU THE SCOPE OF EIA'S INVESTMENT ACTIVITY.

MR. CHAIRMAN, THIS INITIATIVE HAS RECEIVED MUCH PUBLICITY SINCE ITS INCEPTION, AND THERE IS NO DOUBT THAT IT WILL BE VIGOROUSLY DEBATED BY BOTH CHAMBERS OF CONGRESS. AND WELL IT SHOULD, SINCE IT CONSTITUTES ONE OF THE MOST SIGNIFICANT UNDERTAKINGS THAT THIS NATION HAS CONSIDERED IN THE PAST TWO DECADES.

I WOULD LIKE TO ADDRESS BRIEFLY A FEW OF THE MAJOR CRITICISMS OF THE PROPOSAL AND, BY DOING SO, FURTHER EXPAND ON THE EIA CONCEPT AND, PERHAPS, ANTICIPATE SOME OF THE CONCERNS WHICH YOU MAY HAVE.

ONE OF THE MAJOR OBJECTIONS TO EIA IS THAT IT WOULD DIVERT TOO LARGE A SHARE OF CAPITAL FROM THE MARKET AND, THEREBY, CROWD OUT OTHER NECESSARY INVESTMENTS IN THE ECONOMY. THIS ARGUMENT IS UNFOUNDED WHEN WE LOOK AT THE PATTERN OF POST-WORLD WAR TWO CAPITAL FORMATION AND THE ENERGY SECTOR'S SHARE OF THE TOTAL. FOR THE PERIOD 1947-1974, THIS SECTOR'S SHARE OF OUTLAYS AVERAGED OUT TO 29 PERCENT. AT THE ESTIMATED \$580 BILLION NEEDED BETWEEN NOW AND 1985, THE ENERGY SECTOR WOULD ABSORB ABOUT THE SAME HISTORICAL FRACTION, BUT CERTAIN AREAS WILL FIND IT DIFFICULT TO ATTRACT NEEDED CAPITAL. BY THE STIPULATION IN THE LEGISLATION THAT THE SECRETARY OF THE TREASURY CONCUR IN THE TIMING, METHOD, SOURCE, INTEREST RATE,



AND OTHER TERMS AND CONDITIONS OF EIA TRANSACTIONS, WE CAN BE ASSURED THAT THE CONDITION OF THE CAPITAL MARKETS WILL BE CAREFULLY CONSIDERED.

SOME QUESTION THE ADVISABILITY OF PROVIDING SUMS OF MONEY TO THE ENERGY INDUSTRY, WHICH HAS BEEN ACCUSED OF REAPING HIGH PROFITS IN RECENT TIMES. FIRST OF ALL, THE HIGHLY PUBLICIZED GAINS MADE BY THE OIL COMPANIES FOLLOWING THE EMBARGO ARE RECEDING, MAKING THEIR PROFIT POSITION COMPARABLE TO OTHER MAJOR INDUSTRIES IN THIS NATION. SECONDLY, WE ARE IN AN AREA WHERE THE COSTS OF ESSENTIAL ENERGY PROJECTS ARE UNKNOWN. WITH THE PRICING STRUCTURE IN THIS COUNTRY, WITH THE UNCERTAINTY OF GOVERNMENT DECISIONS REGARDING ENERGY, PRIVATE ENTERPRISE - NO MATTER HOW SOLVENT - WILL NOT MAKE AN INVESTMENT UNTIL THEY KNOW WHETHER THEY HAVE AN EXPECTATION OF EARNING A RETURN COMMENSURATE WITH THE RISKS. WE ARE SPEAKING HERE, OF COURSE, OF THE SO-CALLED ENERGY RISK VENTURES THAT WERE DESCRIBED PREVIOUSLY. IN THE AREA OF CONVENTIONAL ENERGY DEVELOPMENT, THE PETROLEUM INDUSTRY CAN BE EXPECTED TO RAISE THE MONEY NEEDED TO FUND SUBSTANTIAL INCREASES IN THE COST OF EXPLORATION AND DEVELOPMENT OF DOMESTIC OIL AND GAS, WITHIN THE CURRENT REGULATORY AND ECONOMIC FRAMEWORK.

ON THE SUBJECT OF RISK VENTURES, THERE ARE THOSE THAT CONTEND THAT THE EIA WOULD CERTAINLY LOSE MONEY, SINCE IT APPEARS THAT THE VENTURES ARE SO RISKY THAT PRIVATE ENTERPRISE WILL NOT TOUCH THEM. THE MERE FACT THAT THE PRIVATE SECTOR DOES NOT SUPPORT A CERTAIN PROJECT DOES NOT NECESSARILY MEAN THAT THE PROJECT WILL LOSE MONEY. EIA IS INTENDED TO PROVIDE RISK CAPITAL TO PROJECTS WHICH OFFER THE PROMISE OF CONTRIBUTING IN THE FUTURE TO ENERGY INDEPENDENCE BY OPERATING PROFITABLY ON A COMMERCIAL SCALE, PROJECTS WHICH COULD NOT OTHERWISE SECURE THE NECESSARY CAPITAL TO BEGIN THE FIVE- TO TEN-YEAR PROCESS OF SEEKING APPROVALS FOR, AND CONSTRUCTING, PRODUCTION FACILITIES. EVEN HERE, THE FORMULATION OF THIS PROPOSAL WAS DESIGNED TO LIMIT EIA'S EXPOSURE TO THESE KINDS OF VENTURES. LIMITATIONS, INCLUDING REQUIREMENTS FOR NECESSARY RESERVES, HAVE BEEN INCORPORATED IN THE PROPOSAL TO PREVENT ANY OVER-EXTENSION OF INVESTMENT COMMITMENTS.

IT SHOULD ALSO BE EMPHASIZED THAT NO PERMANENT OWNERSHIP, CONTROL OR OPERATION OF ENERGY FACILITIES BY THE FEDERAL GOVERNMENT THROUGH EIA WILL BE ALLOWED. WE ARE NOT ESTABLISHING ANOTHER LAYER TO THE GOVERNMENT BUREAUCRACY. THE AUTHORITY WILL HAVE A SPECIFIED LIFE OF TEN YEARS, WITH NEW FINANCING COMMITMENTS PERMITTED ONLY IN THE FIRST SEVEN YEARS OF ITS EXISTENCE. IN LINE WITH THIS IS THE CONCERN EXPRESSED BY MANY OVER THE CONTROL TO BE EXERCISED BY THE CONGRESS OVER THE OPERATIONS OF THE EIA. CONGRESS WILL HAVE A CONTINUING

ROLE IN THE REVIEW OF EIA ACTIVITIES. FIRST, IN THE ORGANIZATION PHASE OF THE AUTHORITY, THE FIVE-PERSON BOARD OF DIRECTORS WILL BE APPOINTED BY THE PRESIDENT, SUBJECT TO THE ADVICE AND CONSENT OF THE SENATE. IN ITS OPERATIONS, SINCE ANY EIA REQUEST FOR EQUITY CAPITAL WOULD BE SUBJECT TO THE NORMAL BUDGET AUTHORIZATION AND APPROPRIATION PROCESS, CONGRESS WILL HAVE THE OPPORTUNITY TO REVIEW THE POLICIES OF EIA. EIA WILL ALSO BE REQUIRED TO SUBMIT AN ANNUAL REPORT TO CONGRESS, AND THE GENERAL ACCOUNTING OFFICE IS SPECIFICALLY AUTHORIZED TO AUDIT THE ACTIVITIES OF THE CORPORATION.

FINALLY, THERE ARE SOME WHO WOULD CRITICIZE US FOR EVEN ATTEMPTING TO REACH THE GOAL OF ENERGY INDEPENDENCE, SINCE, IN THEIR MINDS, IT APPEARS TO BE A "PIE-IN-THE-SKY" HOPE. LET ME REITERATE THAT "ENERGY INDEPENDENCE" DOES NOT MEAN "ZERO IMPORTS." THIS ADMINISTRATION HAS BEEN WORKING TOWARD A REALISTIC AND VIABLE PLAN WHEREBY OUR DOMESTIC PRODUCTION OF ENERGY COULD BE INCREASED TO THE POINT AT WHICH, IN CONJUNCTION WITH VIGOROUS CONSERVATION PROGRAMS, OUR LEVEL OF IMPORTED ENERGY WOULD BE ACCEPTABLE. BY THAT I MEAN A LEVEL WHICH IF INTERRUPTED BY ANY CAUSE, BE IT ARBITRARY PRICE HIKES OR EMBARGO, WOULD NOT ADVERSELY AFFECT THIS NATION'S ECONOMY OR FOREIGN POLICY FLEXIBILITY.

THE ENERGY INDEPENDENCE AUTHORITY NOW BEFORE YOU IS A CRUCIAL PART OF THIS OVERALL PROGRAM. I WOULD HOPE THAT WE COULD NOW

NARROW OUR DIFFERENCES, RESOLVE THEM, AND FORMULATE A PROGRAM TO COPE WITH OUR ENERGY PROBLEMS THAT MOBILIZES OUR DOMESTIC RESOURCES AND DEMONSTRATES TO OUR FRIENDS AND PARTNERS AROUND THE WORLD THAT WE ARE DETERMINED TO MASTER OUR ECONOMIC DESTINY.

