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JOINT TASK FORCE REPORT ON ENERGY TAX POLICY

PRESENTATION FOR THE LEAGUE OF MUNICIPALITIES

NOVEMBER 20, 1996

New Jersey Board of Public Utilities
Herbert H. Tate, President
Carmen J. Armenti, Commissioner
Edward H. Salmon, Commissioner

Department of the Treasury
Brian W. Clymer, State Treasurer

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Executive Summary

One of the major objectives of Governor Christine Todd Whitman's administration is to make New Jersey "Open for Business". New Jersey's high energy costs and high energy taxes, however, act as a deterrent to businesses locating or remaining in the State.

Further increased competition in the State's energy industries over the past decade has led to a growing concern among New Jersey's energy producers, suppliers and consumers regarding differences in the way utility and non-utility suppliers of energy are taxed. Differential tax policies which favor one entity over another in a competitive marketplace compromise economic efficiency which could lead to higher prices for the State's energy consumers.

The differential tax policy has also led to a decline in the State's collection of gross receipts and franchise tax revenues which are distributed to municipalities. This decline occurs as customers switch to non-utility suppliers of energy. This is because non-utility suppliers are not subject to the Gross Receipts and Franchise Tax.

The New Jersey Energy Master Plan Committee recognized these concerns in its 1995 Energy Master Plan Phase I Report, and recommended that the Board of Public Utilities and the Department of Treasury form a joint task force (the Joint Task Force) to investigate these and other related issues. The Joint Task Force, after an extensive, open process, which included public workshops and three public hearings across the State, developed proposed modifications to the State's energy tax policies.

The proposed energy tax policy modifications will:

- cut energy tax rates by approximately 45% over five years for each household and business currently receiving natural gas and electric utility service;
- require that 100% of all reductions in energy taxes be passed through to residential and business customers to lower their energy rates;
- prevent future erosion of gross receipts and franchise tax revenues to municipalities due to increased competition in the natural gas and electric markets;
- enhance economic efficiency by taxing competing utility and non-utility entities the same; and
- stimulate economic development and enhance the State's ability to attract and retain jobs.

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The proposed changes to the State's energy tax policies include the following major features:

- eliminate the gross receipts and franchise taxes currently included in utility bills at a rate of approximately 13% for natural gas, electric and telecommunications utilities;
- apply the existing 6% sales tax to retail sales of natural gas and electricity;
- apply the existing corporation business tax (9% of net income) to natural gas, electric and telecommunications utilities; and
- impose a transitional energy facilities assessment (TEFA) on natural gas and electric utility facilities such as poles, lines, pipes, and generating equipment.

The transitional energy facilities assessment should initially be set to ensure that rates do not increase for any customers. The transitional energy facilities assessment will be phased out over a period of approximately five years commencing in the third year subsequent to enactment of the bill.

A more detailed description of the proposal, including an analysis of its impact on specific groups, is included in the body of this report. It is the belief of the Joint Task Force that the recommendations included herein will improve economic efficiency by taxing competing entities the same, improve the State's regional competitiveness by lowering the State's energy taxes and costs, prevent the future erosion of revenues to municipalities, and lead to lower energy tax rates for all natural gas and electric utility customers in the State.

The Joint Task Force proposal represents a framework which is intended to be a starting point for discussions among members of the Legislature, the Administration and the public. The Joint Task Force looks forward to working with the Legislature and the public to find resolutions to these difficult public policy issues.

Evolution of New Jersey Energy Tax Policies

The practice of taxing the gross receipts of New Jersey's public utilities is over a century old. In 1884, the State legislature passed a law which levied variable taxes on the gross receipts of certain utilities. The tax, known as the franchise tax, was imposed in exchange for the right to operate a franchise in a municipality. In 1900, the Voorhees Tax Act modified the franchise tax to provide that the receipts collected by the State were to be transferred back to municipalities (C. 195, P.L. 1900). The franchise tax rates were increased from 2% to 3% in 1917, 4% in 1918 and 5% in 1919 and thereafter (C 17, P.L. 1917). The Public Utility Gross Receipts Tax was levied in 1919 as an addition to the Franchise Tax (C. 25, P.L. 1919). The tax was in lieu of state, county, school and local taxes on personal property and materials other than land and buildings. The rate of tax was the average rate of the aggregate general property. The average rate of taxation concept was eliminated in 1960 and a tax rate of 7.5% of gross receipts was established (C. 50, P.L. 1960).

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Over the years the tax on gas and electric utility retail sales evolved into a four part tax as follows:

- Gross Receipts Tax - a tax in lieu of all State, county, school and local taxation on personal property. Utilities paid 7.5% of gross receipts for the previous calendar year (C. 50, P.L. 1960).

- Franchise Tax - A tax paid by a utility for the privilege of exercising its franchise and for using streets, highways and other public places. The rate, capped at 5%, was based on the length of lines or mains a utility operates on public property as a percentage of the total length of its mains.

- Excise Tax - A public utility excise tax for State use which is computed at a rate of 0.625% of the utility's gross receipts as prescribed for the franchise tax (C. 42, P.L. 1963.)

- Excise Tax - Another excise tax authorized under the same law which was computed at a rate of 0.937% of the utility's gross receipts for the previous calendar year.

Current Gross Receipt And Franchise Taxation

In 1991, with the enactment of P.L. 1991, C. 184, the gross receipts and franchise tax was fundamentally changed. For gas and electric utilities the law restructured the tax to require the payment of taxes on a per unit of retail energy consumption basis rather than as a percentage of the gross receipts of the corporations. This, in part, was to insulate consumers from the effects of taxing inflation in energy costs largely driven by changes in fuel prices.

The law also accelerated the payment of the taxes. Utilities were required to pay the remaining two payments of their 1992 tax liability generating $600 million for the 1992 State budget. In addition, utilities were required to pay 150% of their annual tax liability in 1993 and 1994 in order to pay on a current basis instead of a one year lag. The impact of this change provided approximately $470 million in each of these years to the State budget.

As required by the law, commencing on January 1, 1992, a unit tax was established by the Board of Public Utilities ("Board"), in consultation with the Division of Taxation, for each retail kilowatt-hour of electricity and therm of gas sold by a utility. The unit tax for each customer class was based upon taxes payable for the calendar year 1991 and divided by the kilowatt-hours or therms sold in that year. From this calculation the Board was required to establish standard unit tax rates for each residential and non-residential customer class. This standard unit tax was to be the lowest effective tax rate prevailing in each class among all utility customers in 1991. Over a five year period, each gas and electric utility's tax rate would decrease in incremental adjustments to the standard tax rate, so that in five years through 1997, the lowest tax rate would prevail for customers of all utilities in each class. The unit tax would, in effect, cap future growth in public utility tax revenues from gas and electric utilities at 1991 levels, except for unit taxes collected on increased sales of gas or electricity above 1991 levels. Currently, the GR&FT tax is

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approximately 13% of utility revenues. The law also included language which guaranteed a minimum payment of $685 million to the municipalities.

Other Energy Taxes

Competition in the State's natural gas and electric power markets has led to a number of non-utility entities entering those markets. Over 30 non-utility entities are currently in the business of selling natural gas in the State and many cogeneration companies sell electric power to businesses and industries. These entities are exempt from the gross receipts and franchise taxes since those taxes apply only to utilities. However, these entities pay taxes from which the utilities are exempt as well as taxes which are paid by utilities. These taxes are as follows:

- Corporation Business Tax - Non-utility entities are subject to the general corporation business tax imposed on New Jersey net income at a rate of 9%, while utilities are exempt from the Corporation Business Tax (N.J.S.A. 54:10A-1 et. seq.).

- Sales and Use Tax - Sale of machinery or other equipment for use or consumption in the production, generation, transmission or distribution of gas, electricity or steam for sale is exempt from the sales and use tax. This exemption applies equally to utility and non-utility facilities. In addition, for all cogeneration facilities, the sale of machinery, apparatus, equipment, building materials or structures used for cogeneration are also exempt from sales and use tax. (N.J.S.A. 54:32b-8.13).

- Real Property Tax - Generally, all real property located in New Jersey that is not expressly exempted from taxation is subject to local real property tax. Personal property is generally not subject to such tax. In the case of regulated public utilities, "Real Property" usually includes only land and buildings. Specifically excluded are railways, tracks ties, lines, wires, cables, poles, pipes, conduits, bridges, viaducts, dams and reservoirs, machinery, apparatus and equipment notwithstanding any attachment thereof to lands or buildings. Therefore, public utilities do not pay real property tax on machinery, apparatus and equipment notwithstanding that it may be permanently affixed to the realty.

  Non-utility generators are subject to real property tax on the fair market value of real property. Personal property is not taxable if it is machinery, apparatus or equipment used or held for use in business and is neither a structure to support, shelter, contain, enclose or house persons or property.

- Gross Receipts and Franchise Tax - Utilities are required to include in retail rates unit GR&FT rates equal to approximately 13% of the rate. Co-generators and Public Utility Regulatory Policy Act Qualifying Facilities (QFs) are exempt from collecting GR&FT but are prohibited from selling retail other than to the "host" customer referred to as "inside the fence" transactions. Cogeneration facilities are also exempt

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from paying GR&FT on purchases of natural gas and used to generate electricity and steam.

Taxes on the Telecommunications and Cable Industries

As discussed later herein, the Task Force's investigation was expanded to review the State's telecommunications tax policies. The following summarize existing telecommunication tax policy:

- Gross Receipts and Franchise Tax: Utilities are required to include in rates a 6.125% tax imposed on intrastate gross receipts derived from lines over public streets. Only Local Exchange Carriers (LECs) are subject to GR&FT.

- Corporation Business Tax: This tax imposed on New Jersey net income at a rate of 9%, is paid by long-distance companies, wireless companies, cable television companies, and competitive access providers (Cable affiliates or long distance carriers which provide access to the long distance carriers network, by-passing the local exchange carrier). Local exchange carriers are exempt from the corporation business tax.

- Municipal Tax on Switching Equipment: Local exchange carriers are subject to a tax at the municipal general purpose rate on the net book value of investment of switching equipment. Other providers of telephony are exempt from municipal taxes on switching equipment.

- Franchise Fees: A 2% municipal franchise fee is imposed on the gross receipts of cable television companies derived from "basic" service (non-pay channels). "Basic" service is the lowest level of service offered. However, some companies have chosen to apply the franchise fees to their expanded "basic".

- Real Estate: A tax on real property is paid by all telecommunications and cable television companies.

- State Sales and Use Tax: Cable television customers pay the 6% sales and use taxes only on retail tangible personal property sold, used, consumed or distributed for use in the state. Customers purchasing telecommunications services pay the 6% sales and use tax. Governor Whitman recently signed into law the elimination of the sales and use tax previously applied to yellow pages advertising.

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Regional Competitiveness

New Jersey's energy rates and energy taxes are among the highest in the nation. This has a detrimental impact on the State's ability to attract and retain business, and has been a significant factor in the State's loss of several energy intensive industries.

The following tables provide a comparison of New Jersey's natural gas rates and electricity rates to those in other states in the region, as well as other industrialized states which typically compete with New Jersey for energy intensive jobs.

TABLE 1

COMPARISON OF ELECTRIC RATES for 1994 (cents/KWH)

State	Industrial	Commercial	Residential
New Jersey	7.96	9.94	11.50
California	7.22	10.62	12.17
New York	6.54	11.52	12.77
Pennsylvania	5.62	8.15	9.21
North Carolina	4.65	6.31	7.66
Ohio	4.44	6.80	7.75
Georgia	4.38	7.05	7.28
Texas	4.23	6.82	7.96
Indiana	4.21	5.97	6.85
Virginia	4.08	5.63	7.38

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TABLE 2

COMPARISON OF NATURAL GAS RATES FOR 1994 ($/MBTU)

State	Commercial	Industrial	Residential
New Jersey	3.54	7.17	5.83
New York	5.01	8.15	6.68
Indiana	4.43	6.12	5.28
Ohio	4.24	5.67	5.22
California	3.94	6.27	6.24
Virginia	3.79	7.61	5.54
Georgia	3.72	4.84	3.01
Pennsylvania	3.69	7.19	6.43
North Carolina	3.64	7.04	5.55
Texas	2.37	5.76	4.53

As can be seen, New Jersey's energy rates are among the highest of the states in comparison. If New Jersey is to be competitive in attracting jobs, particularly in energy intensive businesses, we must find ways to lower our energy costs and energy taxes.

Emergence of Competition and Impact on Tax Revenues

Deregulation in the natural gas industry began in 1985 when the Federal Energy Regulatory Commission (FERC) issued Order Number 436 which sought increased access to retail customers by natural gas suppliers. The Order caused a substantial increase in the number and volume of gas transportation arrangements where the sale of gas is no longer provided by a regulated utility.

In April 1992, the FERC further deregulated the gas industry when it enacted FERC Order Number 636. FERC Order 636 eliminated the interstate pipelines as merchants of natural gas, effectively unbundling the services provided by interstate pipeline companies. It also defined the rules for secondary interstate pipeline capacity markets through "capacity release". These steps further increased the ability of those consumers with access to the interstate markets to benefit from competition by purchasing the commodity at market rates.

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The Board of Public Utilities, to extend the competitive advantage enjoyed by large volume customers to smaller industrial and commercial customers, issued "Guidelines for Further Unbundling of New Jersey's Natural Gas Services." (Order dated December 20, 1993, BPU Docket Number GX93110516). These guidelines allow industrial and commercial customers to purchase natural gas transportation services from the local distribution company (utility), and to buy the commodity from other non-utility entities in the marketplace. By approving these guidelines, the Board gave all of the State's commercial and industrial customers access to competitive supplies of natural gas.

The unbundling of the State's natural gas industry has led to lower gas costs for customers. However, it has also reduced the level of GR&FT tax revenues collected by the State from utility retail sales.

The BPU's unbundling policies allow commercial and industrial customers to purchase gas from non-utility entities, thereby avoiding the GR&FT otherwise collected from utility sales. To date, over $231 million per year in sales from non-utility entities have been made and the State has lost over $30 million per year in GR&FT by virtue of customers switching from utility to non-utility suppliers of natural gas.

In 1994, the State collected approximately $78 million in GR&FT from commercial and industrial natural gas customers. In the existing deregulated market, these customers are permitted to an economically benefit from purchasing natural gas from non-utility suppliers. These customers are encouraged to by from non-utility suppliers because they, in effect, receive a 13% reduction in price. Therefore, the State is at risk to lose a significant portion of the $78 million in GR&FT now paid by these customers. Further, given that the BPU is currently reviewing pilot programs which would expand natural gas unbundling to the State's residential customers starting in 1997, a significant portion of the $207 million in GR&FT collected by the State in 1994 from these customers is at risk.

Competition is also evolving in the electric power industry. In 1978, the Public Utility Regulatory Policy Act (PURPA) was enacted as part of the National Energy Policy Act. The drafters of PURPA intended, in part, to encourage the development of cogeneration and small power production facilities as tools in decreasing the country's dependence on imported fossil fuels. Cogeneration facilities use fossil fuels more efficiently by producing both electricity and useful thermal energy (usually steam) from a single energy source. Cogeneration facilities can produce environmental benefits which result from increased fuel efficiencies and economic development benefits by reducing a host company's energy costs. Small power producers use non-fossil fuels such as solar, wind and municipal solid waste to generate electricity. PURPA Section 210 encourages the development of qualifying cogeneration and small power production facilities (QFs) by requiring utilities to purchase the output from a QF at its avoided cost and by exempting a QF from utility type regulation.

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The New Jersey Legislature acknowledged and promoted PURPA's economic development, environmental and generation diversity goals by enacting tax incentives as follows: PURPA QFs are exempt from: 1) GR&FT on electricity purchased from the utilities up to the amount they had generated and sold to the "host," 2) GR&FT on the purchase of natural gas used to generate electricity and; 3) sales and use tax on equipment purchased for the facility.

Many of the State's largest electricity consumers, which previously purchased their power from utilities, have switched to cogeneration, either by building their own facilities or purchasing their power from an "on-site" third party. The incentive to cogenerate is, in part, due to the fact that utilities are required to charge approximately 13% in GR&FT while third party cogenerators are not. It is estimated that 3.0% of all end use sales are currently served by PURPA cogeneration facilities. This equates to approximately $204 million in sales to non-utility entities and a $26.5 million loss of GR&FT revenues to the State and its municipalities.

In 1992, competition in the electric power market was enhanced through the enactment of the Federal Energy Policy Act. This Act allowed the Federal Energy Regulatory Commission to require transmission for wholesale transactions at non-discriminatory prices. The Act also enhanced competition in the wholesale power market through the creation of non-regulated Exempt Wholesale Generators (EWG) which could compete with utilities in the wholesale power market. PURPA QFs and EWGs have competed successfully in New Jersey providing approximately 90% of the new electric capacity built in the last decade (over 2000 megawatts) and competing for many of the utilities largest retail customers.

In 1996, the Federal Regulatory Energy Commission adopted rules which promoted wholesale competition through open access non-discriminatory transmission services by utilities (Docket No. RM95-8-000, 70 FERC P 61,357). The rulemaking is intended to increase competition in the wholesale power markets by providing non-discriminatory access to transmission systems.

Further, New Jersey, as are approximately 40 other states, is currently investigating the potential for retail competition in the State's electric markets through its Energy Master Plan Phase II proceeding. In this proceeding, the Board is examining the appropriate industry structure for bringing the benefits of competition to retail customers and the timing of the transition from monopoly to competitive markets. When the BPU opens up the State's electricity markets to retail competition, the State would likely lose a significant portion of the $875 million in GR&FT collected in 1994 from electric utility retail sales as customers switch to lower cost suppliers.

While the loss of GR&FT revenues due to non-utility gas sales and electricity purchases from cogenerators is significant, it pales in comparison to $1 billion at risk when the Board unbundles the residential gas market and allows for retail competition in the electric market. For this reason, the Joint Task Force believes it is critical that the State's tax policies be modified prior to the further introduction of competition into the State's natural gas and electricity markets.

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The recently enacted Federal Telecommunications Act of 1996, will significantly expand competition in both the telecommunications and cable television markets. This will be accomplished by eliminating prohibitions on local and long distance telecommunications companies and cable television companies from entering each others markets. Telecommunications companies will be permitted to provide video services while cable television companies will be permitted to provide telecommunication services. Since only the local exchange companies pay GR&FT, any market share lost to competition will reduce the $78.5 million collected in 1994 in GR&FT from local exchange companies.

Two other factors have also contributed to the reduction in GR&FT collected. First, pursuant to the 1991 law that created unit tax rates, the five year phase-in toward the lowest unit tax rate has reduced the GR&FT rate. Second, the granting of electric rate discounts which included GR&FT rate reductions has lowered the level of GR&FT revenues collected from certain customers by approximately $4 million per year. Of course, the State was at risk to lose all of the GR&FT revenues from these customers since in each case the Board found that the customer had a viable alternative source of power or would have left the State without the discount.

The New Jersey Energy Master Plan

The New Jersey Energy Master Plan Phase I Report stated that, "economic efficiency requires that production cost should be the prime determinant of competitive position. If taxes distort that position, economic efficiency is sacrificed. This could increase costs to consumers and is unfair to the affected energy suppliers. Given the national trend towards increased competition in energy markets, fair competition requires re-examination of the State's energy tax policy."

The Energy Master Plan Phase I Report included three findings regarding energy tax policies as follows:

1) Existing energy tax policies hinder fair competition between competing fuels.

2) Existing energy tax policies hinder fair competition between competing suppliers of the same fuel. This is particularly true for competition between utility and non-utility firms.

3) Increased competition in the natural gas and electric industries has the potential to significantly reduce the State's collection of gross receipts and franchise taxes.

The report recommended the creation of a Joint Board of Public Utilities and New Jersey Department of the Treasury Task Force to investigate alternative energy tax policies.

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The report included the following recommendations concerning energy tax policies:

- Energy tax policies must take into consideration regional competitiveness. New Jersey's energy taxes should not place the State's industries at a competitive disadvantage with industries in other states in the region.

- The Board of Public Utilities and the Department of Treasury should jointly develop energy tax policy recommendations. The energy tax policy recommendations should consider the appropriateness of a fuel-neutral tax policy; tax policies which promote the State's environmental and energy efficiency objectives; and tax policies which do not differentiate between suppliers of the same fuel in both retail and wholesale markets.

- The Board of Public Utilities and the Department of Treasury should jointly initiate the development of energy, end use, and tax revenue economic models to assess the impacts of various alternative tax scenarios.

- The State should consider the stability of the existing tax base and the subsequent tax revenues collected during the transition from regulated to more competitive markets.

The Joint Task Force

Pursuant to the recommendations in the Energy Master Plan Phase I Report, a joint BPU and Department of Treasury Task Force was formed. In addition, to assist in the process of reviewing the present system of energy taxation and the development of recommendations for changes, a tax advisory group was formed. Participation in the Advisory Group included representatives from the New Jersey Legislature, power marketers, industrial customers, independent power producers, gas and electric utilities, cable television companies and long-distance and local telecommunications companies. The tax advisory group met five times in a span of three months at the end of 1994 and the beginning of 1995. In addition, the Task Force met with consumer and environmental groups to discuss the issues. The Task Force also requested tax proposals from all interested parties. Based on the concerns expressed by the telecommunications industry, the Task Force decided to expand its investigation to include a review of the State's telecommunications tax policies.

In addition to the Advisory Group meetings, the Board of Public Utilities held three public hearings across the State. The public hearings were noticed by publication in New Jersey newspapers. The public hearings generated considerable interest and many commentators. A summary of the formal proposals and summary of the public comments are available upon request.

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In addition to reviewing the specific proposals summarized, the Task Force reviewed literature on energy tax and enlisted a tax consultant, Ernst and Young, LLP, to examine how New Jersey's energy tax rates compared to those in other states in the region and with states that are competing for New Jersey businesses. The following summarizes the consultant's findings:

The study consisted of three major sections, the most significant of which compared the total tax liability and revenues by New Jersey Natural Gas Company (NJN) and Public Service Electric & Gas Company to the tax liability and revenues collected from similarly situated utilities in the states studied. Due to the differing manners in which sister states utilities are taxed, the total tax collected as a percentage of total revenue gives us the most accurate picture as to how New Jersey's taxing policies rank with sister states. This tax "rate" was then applied to PSE&G's and NJN's revenue representing the amount of tax which would have been collected if PSE&G/NJN had generated sales in the sister states.

The results of the study, which are summarized in Table 3 below, show that New Jersey has the first or second highest energy tax rates in the country.

TABLE 3
Comparison of Energy Taxes
(as a percentage of revenues)

State	Electric	Natural Gas
New York	16.5%	7.9%
New Jersey	12.4%	12.8%
Ohio	12.2%	7.7%
Indiana	11.8%	4.7%
N. Carolina	10.5%	5.4%
Georgia	8.3%	2.3%
Pennsylvania	8.3%	3.0%
California	8.1%	2.5%
Texas	6.7%	2.6%
Virginia	4.3%	3.0%

The Task Force Proposal

Based on its extensive review of the information submitted at the workshops and public hearings and gathered on its own, the Joint Task Force recommends the following modifications to the State's energy and telecommunications tax policies:

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1. **Eliminate the Gross Receipts and Franchise Tax** - on natural gas, electricity, and telecommunications sales. Maintain GR&FT on water and sewer utilities only.

2. **Apply the existing 9% State Corporation Business Tax** - to natural gas and electric utilities, and on local exchange companies. All other telecommunications providers and sellers/marketers of natural gas or electricity doing business in New Jersey are currently subject to the corporation business tax. This change will result in utilities being taxed in the same manner as their competitors as well as other corporations in the State.

3. **Apply the existing 6% State sales tax** - to retail sales of electric energy and natural gas with the following exemptions.

   a) Wholesale transactions which are currently exempt from GR&FT would remain exempt from the sales tax.

   b) Self generation and third party "inside the fence" electric sales would be exempt from the sales tax. However, purchases of natural gas used to generate retail electricity used inside the fence would be subject to the sales tax.

   c) Cogeneration purchases of natural gas from any source, plus purchases of natural gas from non-utility entities by commercial and industrial customers, which were in effect on December 31, 1995, based on an average four year lookback, would be grandfathered and exempt from the sales tax.

   d) Sales by existing municipal electric utilities would be "grandfathered" and exempt from the sales tax. However, sales from any newly created municipal utilities would be subject to the Sales and Use Tax and Corporation Business Tax.

   e) Inter-utility sales which are currently exempt from GR&FT would be exempt from the sales tax.

4. **Transitional Energy Facilities Assessment (TEFA)** - would be imposed on all natural gas and electric utility transportation, distribution and generation facilities. The TEFA can be set at any level deemed appropriate to meet the public policy objectives of the Legislature and the Governor. However, the Task Force strongly recommends that TEFA be set to ensure that the rates for customers do not increase. To minimize rate impacts, a separate rate should be set for each utility.

5. **Phase out the Transitional Energy Facilities Assessment** - The Joint Task Force recommends that the TEFA be phased out over a period of 5 years commencing in the third year subsequent to enactment of the law. Revenue decreases which occur due to the phase-out of TEFA will, in part, be made up by growth and sales, described in more detail below. Any reductions in the TEFA must flow through to customers as a reduction in rates.

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6. **Energy tax reduction** - 100% of any energy tax reductions must passed on to customers through lower rates.

Revenue Impact of Proposal

The Joint Task Force commissioned a forecast of New Jersey's economic growth by the WEFA Group, Inc., (WEFA) a nationally recognized independent economic forecasting group. Pursuant to the WEFA forecast, the New Jersey economy is expected to grow at about 5% per year from 1997-2003 under the current energy tax structure which imposes a high burden on the cost of energy. Energy costs are an important factor in determining New Jersey's competitive position in the region and the country. Lower costs of doing business in New Jersey stimulate long term growth by making it easier for firms to invest and expand. As TEFA is phased-out, the proposed tax structure will increasingly lower the tax burden and the cost of energy. Therefore, the WEFA forecast is almost certainly too low. Appended as Attachment A is a document entitled, "Eliminating GR&FT--The Effect on Future Economic Growth" ("Economic Document"). The Economic Document goes into detail outlining the WEFA forecasts and the impact of the Proposal on those forecasts as well as future energy prices.

In constructing its forecasts of the revenue impacts of the Proposal as set forth in Table Four, the Joint Task Force conservatively assumed a 4% annual rate of growth of the 1995 natural gas revenue base, a 2.24% annual rate of growth of the 1995 electric revenue base and a 1.375% annual rate of growth from energy utilities 1995 net income for federal tax purposes as adjusted. A more detailed explanation of the growth and other assumptions underlying Table Four is set forth in Attachment B. The rates of growth utilized by the Joint Task Force in its revenue impact are substantially below the rates of growth that can reasonably be anticipated based on the forecasts set forth in the attached Economic Document. Therefore, a more likely outcome is that energy tax revenues collected by the State will be higher than those set forth in Table Four.

Table 4 indicates that the TEFA would be set no higher than $361 million to ensure that the State loses no revenue from that raised by GR&FT in 1996. As the proposal requires that the TEFA phase-out not begin until 1999, the Proposal maintains the level of GR&FT revenue in 1997 and actually raises an additional $8 million in 1998 over and above GR&FT revenues received by the State in 1996. As shown in Table 5, if the *status quo* is maintained, GR&FT revenues are estimated to further decline in 1997. Therefore, the financial benefit of the Proposal is that it stems the decline in GR&FT revenues and also ensures that tax revenues from utilities will remain at 1996 levels or greater for the first two years after implementation. Thereafter, under the Proposal, the State will control the loss of utility tax revenues at a rate of 20% per year as TEFA is phased out over a five year period. Incorporating the conservative growth assumptions set forth above, the phase-out of TEFA would result in a controlled loss of energy tax revenues of approximately $50--$60 million per year in the years 1999-2003. Subsequent to the TEFA phase-out in 2003, energy tax revenues would become an increasing revenue source.

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This is because under the Proposal, one declining energy tax base (GR&FT) is being replaced by two growing tax bases (Sales & Use Tax and Corporation Business Tax) in a manner that guarantees a 45% reduction in the tax cost of energy to consumers when fully phased-in. Maintaining the *status quo* in the current deregulated energy environment will likely, as explained in other parts of this report, result in a quicker and far greater loss of energy tax revenues than the expected $361 million TEFA forecasted under the Proposal. Furthermore, under the *status quo*, the loss of tax revenue will occur without any energy tax reduction benefits to utility consumers.

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TABLE 4

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TABLE FOUR

Estimates of Tax Yields Under Joint Task Force Proposal

Proposed Utility Tax Reform. Projected Revenue, Fiscal 1997-Fiscal 2004

	F & GR/Excise Tax			Sales and Use Tax	Corporation Business Tax			TEFA	Grand	Change from
Fiscal Year	Energy	Telecomm	Total	Energy	Telecomm	Energy	Total CBT	Energy	Total	Prior Year
1996	$999	$75	$1,074						$1,074	
1997				$530	$73	$110	$183	$361	$1,074	$0
1998				$539	$74	$108	$182	$361	$1,082	$8
1999				$549	$74	$103	$177	$289	$1,015	($67)
2000				$566	$76	$102	$178	$217	$961	($54)
2001				$580	$76	$102	$178	$144	$902	($59)
2002				$593	$78	$105	$183	$72	$848	($54)
2003				$606	$78	$108	$186	$0	$792	($56)
2004				$625	$79	$113	$192	$0	$817	$25

* Assumptions underlying Table 4 are appended as Attachment B

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Municipal Allocation

Although the Task Force is making no specific recommendation with respect to the issue of allocating and distributing GR&FT revenues to municipalities, the current method of calculation and appropriation by the Legislature of those revenues, as well as the timing of certifications of distribution by the State and its impact on municipal budgets are replete with problems that warrant discussion.

Current law requires that a minimum of $685 million in GR&FT be distributed to qualified municipalities as a "regular" distribution. Any revenues in excess of the amount calculated under the State's Retention Program is disbursed under a "supplemental" distribution. The supplemental distribution reached a high of $97 million in calendar year 1995, but has dropped to $45 million in calendar 1996. Assuming that no changes are made to the current structure of taxation, the Joint Task Force projects that the amount available for supplemental distribution will drop to zero in calendar 1997 as GR&FT revenues continue to fall.

TABLE 5

State Fiscal Year	Total GR&FT (Million)	Municipal Distribution (Regular & Supplemental)
1995	$1,197	$782
1996	$1,140	$730
1997 est.	$1,062	$685

The amounts calculated under the regular or supplemental distributions may be reduced or eliminated depending on a municipality's local purpose tax rate over the course of several years and/or its per capita distribution of GR&FT revenues. Any reductions in distribution imposed under these sections of law will usually be repeated for several years. While the initial purpose of the limitations was to prevent inordinate distributions to financially secure communities, the result has been that municipalities are, in effect, penalized for achieving low local purpose tax rates, or they are forced to legally manipulate the local tax rate to avoid the reductions.

The basis for calculating the distribution is the stated value of utility inventory used or held for use within municipal boundaries. This results in a requirement for utilities to maintain inventories of all poles, wires, equipment and generating capacity installed or stored in each municipality. Normal movement of inventories from year-to-year by utilities sometimes cause rather large, unexpected changes in GR&FT distributions.

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By way of illustration, a New Jersey utility recently changed their business practices with respect to inventories of uninstalled items held for use. This caused a significant reduction in the reported value of inventory in the municipality in which the items had previously been stored. As a result, the calculated distribution of GR&FT revenues for that town dropped by 21% in a single year.

Similar, but even more dramatic reductions occur when generation facilities are closed. Current law requires the value of these facilities be removed from inventory upon closure or retirement. Another anomaly in the required formula is that a town may benefit in its distribution from the inventory value of an installed item even though the equipment may have been installed to service customers in another town. For example, a housing development in Town "A" requires a new transformer to provide sufficient electrical power but the utility installs the transformer just over the border in Town "B". The inventory value of the installed transformer is included in Town "B" which results in an increase in the GR&FT distribution to Town "B".

As with any imperfect system, errors sometimes occur. Since all qualified municipalities are affected by calculated amounts for all other municipalities, current law requires that errors discovered after certification and distribution begins must be delayed until the following year. This process negatively impacts not only the affected town(s), because the correction is delayed until the next year, but in all towns whose distributions in the next year are reduced to replace the funds.

The timing problems result from the fact that the State, as required by law, does not send bills to utilities for the current year until March 1st. Tax payments from the utilities are due on April 1st. Therefore, a firm projection for the supplemental distribution to each municipality is not available until after March 1st, a date which is after some towns have adopted their budgets. In its FY 1996 budget, the State "froze" distribution amounts at 1995 levels in an attempt to introduce a one-year "lag" in the allocation process, so that towns could anticipate their distribution with relative certainty. This was done through budget language, but has not been codified into the GR&FT statute.

In summary, the Task Force suggests that the current method of calculating, allocating and distributing GR&FT revenues to municipalities has become unnecessarily complex and is quickly becoming outdated as the energy marketplace continues to change. The Joint Task Force looks forward to working with the Legislature and concerned parties to discuss alternatives to the current process.

New Jersey Energy Tax Policy Problems Resolved

A) Lowers ratepayers energy taxes - New Jersey's GR&FT rate is currently approximately 13%. After the phase-out of TEFA the aggregate energy tax rate will drop to approximately 7.5%, which is approximately 45% below the current tax rate.

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B) The proposal replaces a declining GR&FT revenue stream with two increasing revenue sources - As more utility customers switch to non-utility sources of energy, the tax base and tax revenues collected from GR&FT will continue to decrease. This revenue erosion will likely cause significant hardships to the State and the municipalities which rely heavily on these revenues. The proposed energy tax modifications will stem and reverse the revenue erosion occurring in GR&FT.

C) Enhances Regional Competitiveness -- The State of New Jersey currently has among the highest energy taxes in the Country. These costs have in the past contributed to businesses leaving the State and building facilities in other states. This has had a negative effect on the State's economy and its residents. By lowering end use energy costs and taxes, New Jersey can retain and attract more businesses, create new jobs and improve the overall economy of the State.

D) Levels the competitive playing field between utility and non-utility participants - Under the current system of energy taxation, utility and non-utility market participants are taxed differently. By maintaining a tax advantage in a competitive marketplace, economic efficiencies created by competition are reduced. The proposed changes to existing tax policy will eliminate tax discrepancies and enable the production cost to be the prime determinant of competitive position in New Jersey.

E) Does not penalize those who relied on current tax structure -Industrial and commercial customers that have switched to non-utility suppliers of natural gas will not be penalized for being aggressive in the energy market and will retain the benefits of their existing agreements. Existing cogeneration customers will also maintain current tax exemptions.

F) Customers of existing municipal utilities will not be impacted - By exempting existing municipal utilities, their customers will see no additional tax burden. The proposal will eliminate the tax advantages of forming a new municipal utility.

Impacts of Proposal

The impacts of the Task Force proposal on consumer classes subsequent to the TEFA phase-out are as follows:

Retail Electric Customer

Utility retail customers (residential, commercial and industrial): all customers will see a 45% reduction in energy tax rates.

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Existing retail cogeneration customers: No additional tax burden.

Future retail cogeneration customers: Will see a reduction in current tax advantage. Also, by imposing a 6% sales tax on natural gas purchased for "inside the fence" electric generation, cogenerators will see an increase in costs since natural gas for cogeneration is currently exempt from GR&FT.

Retail Natural Gas Customers

Bundled utility retail customers (residential, commercial and industrial customers buying both transportation and commodity from the utility): Will see a 45% reduction in natural gas tax rates.

Existing Transportation Customers (those buying transportation from a utility and the commodity from a non-utility entity): Will see a 45% reduction in transportation rate. No additional tax burden on commodity purchase for grandfathered purchases.

Future transportation customers: 45% reduction in transportation tax rate. Future commodity purchases would include 6% sales tax (currently exempt from GR&FT if from non-utility).

Utilities:

Electric: No impact on utility earnings. Lower rates give utilities an advantage in competing for customers. Competitive position is improved when competing with cogenerators for retail customers. Utilities will lose existing competitive advantage in the wholesale power market as revenues derived from those sales will become subject to the Corporation Business Tax.

Gas: No impact on earnings. Lower rates give utilities an advantage in competing for customers. Competitive position is improved when competing for retail customers.

Telecommunications: No impact on earnings or competitive position, since it is estimated that the Corporation Business Tax approximately equals the GR&FT.

Non-Utility Entities:

Cogenerators (retail): Tax advantage in competition for retail customers is significantly reduced.

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Cogenerators and non-utility generators (wholesale): No additional tax burden. Competitive position improved for wholesale sales by cogenerators and non-utility generators because utilities become taxable on these revenues in a similar manner as utilities, thereby leveling the playing field. This is because utilities, like cogenerators and non-utility generators, will be subject to the Corporation Business Tax.

Non-utility suppliers of natural gas: Lose existing competitive advantage over utility suppliers. Required to collect 6% sales tax on future sales.

Municipal Electric Utilities: No additional tax burden on existing municipal electric utilities or their customers. Tax incentive to create a municipal electric utility is eliminated.

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ATTACHMENT A

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ELIMINATING GR&FT--THE EFFECT ON FUTURE ECONOMIC GROWTH

I. INTRODUCTION

The elimination of the GR&FT will cause offsetting increases in tax revenues in two ways.

First, the reduction in the unit tax on energy will lower the price of energy to consumers and this will lead to an increase in energy sales and the application of the smaller unit tax to a greater number of units.

Second, the lower priced energy will reduce the cost of business, depending on the energy intensity of the particular business, and this will cause an increase in the total level of economic activity in New Jersey and a concomitant increase in tax revenues.

Any estimate of future tax revenues must of necessity rest on forecasts of the level of future economic activity in New Jersey. As New Jersey's economy is closely tied to the United States economy as a whole, forecasts of New Jersey's economy must also rest on forecasts of the US economy. Although policy decisions require that forecasts be made, policy makers should bear in mind that they are forecasts. The future is not preordained and what actually happens in the future will be determined by a myriad of conscious decisions made by consumers, business people, and policy makers.

Forecasters understand that many different events and decisions can affect their forecasts and they usually deal with this by basing their forecasts on a continuation of the *status quo*. In the absence of knowledge of what is going to change in the forecast period, forecasters take the only feasible approach of assuming a continuation of everything not specified to change. The fact that the future level of economic activity will be determined by individuals confers both danger and opportunity on the policy maker. The danger is that any forecast will be in error to some extent. The opportunity is that the policy maker has the ability to influence the future and to make it better than the future predicted in the *status quo* based forecast.

If New Jersey changes its energy tax structure as proposed, the absolute cost of electricity in New Jersey will decline as the long term tax burden declines from about 13% under the Gross Receipts and Franchise Tax to about 7%. The cost relative to other states may change as well as they consider changes to their energy tax structures. The New Jersey forecasts based on the *status quo* assumption will thus tend to underestimate future economic growth.

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II. FORECASTS OF STATE INCOME WITHOUT ENERGY PRICE CHANGES

The WEFA Group, Inc. (WEFA) has produced an econometric forecast of the New Jersey Economy through 2003. WEFA bases its forecasts on a sophisticated model that uses information about the economies of the surrounding states and the United States as a whole. Unfortunately, even though it is probably the best available forecast, the WEFA forecast uses the assumption that energy prices in New Jersey will not change relative to prices in other States. In Table 1, we show the results of the June WEFA baseline forecast prepared in October 1996. The latest WEFA forecast, which became available in November 1996, shows even stronger Gross State Product growth.

Table 1

WEFA Forecasts--Baseline

Year	1996	1997	1998	1999	2000	2001	2002	2003
Gross State Product (current $ bill)	264.94	277.15	289.92	304.43	319.86	337.34	355.67	375.36
Rate of Growth (%)		4.61%	4.60%	5.01%	5.07%	5.46%	5.43%	5.54%

The WEFA forecast is almost certainly too low because it does not take into consideration the decline in the price of energy in New Jersey that will result from replacing the Gross Receipts and Franchise Tax with the proposed tax structure.

III. ENERGY CONSUMPTION INCREASES WITH INCOME

The future growth of energy consumption in New Jersey will increase as the Gross State Product increases. The relationship between income and consumption is called the income elasticity of demand. Numerous econometric studies have found that the income elasticity of demand for energy is approximately 0.5 or larger. An income elasticity of 0.5 means that consumption of electricity and gas tends to increase at one-half the rate of increase in real New Jersey Gross State Product.

The projected increase in Gross State Product will cause an increase in energy consumption. If the rate of inflation is about 3%, the energy consumption will increase at a rate of 0.5% to 0.75% per year just due to the increase in income.

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IV. ENERGY PRICES AND INCOME AFFECT FORECASTS

1. Tax Decreases

A reduction in the tax burden reduces the cost of energy. As the energy tax reform proposal requires all tax reductions to be passed on to the customer, the switch from the Gross Receipts and Franchise Tax to the proposed tax structure would generate about a 45% reduction in the tax cost of energy when fully phased in. As a result, energy prices would therefore decline about 7%.

A 7% decline in the price of energy should cause an increase in energy consumption of approximately 2%. The 2% increase will most like require two to three years to fully take effect, but after that increase, the sales level in each subsequent year will be 2% greater. Attachment C is a table showing the results of all major studies of the demand for electricity. The elasticities we use in this report are conservative relative to those reported in the table.

V. FORECAST WITH INCOME AND ENERGY PRICE CHANGES

The decrease in energy prices will certainly cause faster growth of the New Jersey economy. The difficult question is how much faster. Given the assumption that the tax on energy will decrease by about 45%, the forecasts of energy sales are all too low by at least 2%.

In the present circumstances of excess generation capacity for electricity and the transformation of the electricity industry, the price of electricity plays an especially important role in the health of New Jersey's economy. The greater sales of electricity caused by the lower price will lead to lower average prices for consumers.

The effects of a lower price for energy were examined in a simulation of the New Jersey economy done by WEFA using their New Jersey state econometric model. The WEFA analysis suggests that the fully phased-in impact would increase the Gross State Product growth rate by 0.3% per year. This is an annual increase of over $3 billion in the value of economic activity.

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Table 2, illustrates New Jersey's Gross State Product (GSP) as it will be with the reduced tax on energy. The GSP will be higher than the WEFA forecast due to the lower energy prices. GSP like the more familiar national measure of Gross Domestic Product (GDP) is the single best measure reflecting the health of the economy. It measures the total value of all goods and services produced in New Jersey. As such, a more rapidly expanding GSP is the objective of the Whitman administration's economic policy as it means expanding incomes for New Jersey workers and businesses as well as more job opportunities for New Jersey residents.

Table 2

WEFA Forecast With 0.3% Energy Price Effect

Year	1996	1997	1998	1999	2000	2001	2002	2003
GSP with 45% tax cut phased-in	264.94	277.15	289.92	304.78	320.73	338.41	357.58	378.68
Growth Rate of New GSP		4.61%	4.60%	5.13%	5.23%	5.51%	5.66%	5.90%
Change in GSP from Baseline	0	0	0	0.35	0.87	1.08	1.91	3.32
Change in Rate of Growth from Baseline		0.00%	0.00%	0.12%	0.16%	0.05%	0.23%	0.37%

CONCLUSION

The New Jersey economy is expected to grow at 4.61%--5.54% per year from 1997-2003 under the current energy tax structure which imposes a high burden on the cost of energy. Energy costs are an important factor in determining New Jersey's competitive position in the region and the country. Lower costs of doing business in New Jersey stimulate long term growth by making it easier for firms to invest and expand . The proposed tax structure, as it is phased in, will lower the tax burden and the cost of energy. Based on the WEFA simulation, the Joint Task Force expects this to add an additional 0.37% to the growth rate of the New Jersey economy when fully implemented.

Relative energy costs are important to New Jersey's economic growth. Other states in the region are also considering implementing major energy tax reform which will have an impact on relative energy costs in the region and ultimately New Jersey's competitive position. While it is impossible to anticipate exactly how relative prices will change until we know what changes other states are adopting, the timing of the changes has its own clear impact. Lack of timely action in an environment that is rapidly changing via energy deregulation and tax reduction in other states can only handicap New Jersey in its ongoing quest for economic development.

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ATTACHMENT B

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Assumptions Underlying Table Four

Tax Base and Growth Assumptions:

1) Sales Tax:

Natural Gas Firms: Calendar 1995 revenues (as provided by BPU staff) from natural gas sales/services were used to estimate calendar 1997 sales tax. Most revenue from tax-exempt sales, other than those to the Federal government, have been excluded from this sales base. This revenue base was increased by 4% annually, to project sales tax for Calendar 1998 and thereafter, e.g., 1995 revenues * 1.04% = 1998 revenues for sales tax estimation.

Electric Firms: Calendar 1995 revenues (as provided by BPU staff) from electricity sales/services were used to estimate calendar 1997 sales tax. No adjustments for revenues from tax-exempt sales have been made to this data. This revenue base was increased by 2.24% annually, to project sales tax for Calendar/Fiscal 1998 and thereafter, e.g., 1995 revenues * 1.0224% = 1998 revenues for sales tax estimation.

Sales tax base = Revenues, less former F & GR tax load, plus new non-sales tax load.

2) Corporation Business Tax

Natural Gas Firms: 1995 net income for federal tax purposes (as provided by BPU staff) was used to estimate calendar 1997 quarterly estimated payments of CBT liability. This income base was increased by 1.375% annually to project estimated quarterly payments for calendar year 1998 and thereafter, e.g., 1995 net income * 1.01375 = 1998 net income for upon which 1998 quarterly payments are based. Estimated tax revenue losses, as calculated by the Division of Taxation, from the proposed alternative depreciation schedule were deducted from the product of estimated net income and the 9% CBT rate to arrive at revenue estimates.

Electric Firms: 1995 net income for federal tax purposes (as provided by BPU staff) was used to estimate calendar 1997 quarterly estimated payments of CBT liability. This income base was increased by 1.375% annually to project estimated quarterly payments for calendar year 1998 and thereafter, e.g., 1995 net income * 1.01375 = 1998 net income for upon which 1998 quarterly payments are based. Estimated tax revenue losses, as calculated by the Division of Taxation, from the proposed alternative depreciation schedule were deducted from the product of estimated net income and the 9% CBT rate to arrive at revenue estimates.

Telecommunications firms: To project calendar 1997 quarterly estimated payments of CBT liability, an estimate of $74.9 million for all three firms currently subject to F & GR taxes was updated, by adding the portion of this estimate attributable to firms other than Bell Atlantic (NJ) to an estimate of tax year 1995 Bell Atlantic (NJ) CBT liability. This latter estimate was obtained through BPU staff from the firm, and is based on estimated 1995 net income for New Jersey CBT purposes . For calendar year 1998 and thereafter, this tax yield base was increased by 1.375% annually to project estimated quarterly payments, e.g., 1997 estimated CBT taxes * 1.01375 = 1998 estimated CBT liability upon which 1998 quarterly payments are based.

All firms whose CBT liabilities are included in this estimates are presumed to use a January - December tax year.

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Other Assumptions

CBT: Credits of $5 million annually for telecommunications firms for prior advance payments of F & GR are reflected in estimated quarterly payments in each year, beginning in 1997.

TEFA: No allowance for "true-up" credits to this tax has been made in these estimates. No annual contribution has been assumed. TEFA decreases by 20% of the base year TEFA each year, beginning in Fiscal 1999, by application of the multiplication factor.

All Taxes: No taxpayers other than those which paid F & GR in 1996 are reflected in these estimates. Furthermore, the estimates in Table Four are conservative in that they do not take into account growth of energy sales above grandfathered purchases. These increased energy sales will result in additional energy tax revenues.

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SUMMARY OF RECENT ELASTICITY STUDIES

Study Description			Data		Price Elasticity		Income Elasticity	
Date	Author	Type	Type	Time Period	Short Run	Long Run	Short Run	Long Run
1	2	3	4	5	6	7	8	9
I. Aggregate Demand Models								
1987	Fiebig, Seale and Theil	Residential cross-country energy demand	Per capita price and volume data for GDP and its components (including energy) for each of 34 countries.	1982 (?) All countries		-0.66 to -0.87 [1]		1.24 to -1.64
				USA		-.60 to -.69		1.24
1987	Chang and Hsing	Residential electricity demand, U.S.	Per capita data from the Annual Energy Review, the Historical Statistics of the United States and Survey of Current Business	1987	-0.33	-1.19	0.24	0.97
1989	Welsch	Energy demand, various countries	Annual OECD data.	1970 to 1984				
				USA	-0.14	-0.50	0.02 to 0.03	0.09 to 0.1
				FRG	-0.30	-0.46	1.86	2.17
				Japan	-0.42	-0.86	0.81	1.23
				France	-0.30	-0.43	1.65	5.55
				UK	-0.09	-0.11	0.54	0.71
				Italy	-0.73	-0.73	0.53	2.27
				Netherlands	-0.61	-0.76	1.33	1.69
				Canada	-0.51	-1.09	0.54	0.72
				Average	-0.13	-0.34	0.24	0.63
1990	Seale, Walker and Kim	Energy demand for 51 countries.	Per capita demand for 11 goods (including energy) using pooled cross-section data from the International Comparison Project (ICP) for 51 countries.	1970, 1975 & 1980 All countries	NA	-0.80 to -1.04	NA	1.17 to 1.42
				USA	NA	-0.79 to -0.87	NA	1.173
1990	Koshal, Koshal, Luthra & Lindley	Energy demand, various countries.	Time series data on per capita GDP and energy consumption for 5 Pan-Pacific countries.	1957 to 1983 -- USA	-0.13	-0.40	0.36 [1]	1.12 [1]
				1957 to 1983 -- Philippines	-0.37	-1.35	0.52 [1]	1.92 [1]
				1962 to 1982 -- Canada	-0.20	-0.38	0.38 [1]	0.72 [1]
				1960 to 1983 -- Korea	-0.08	-0.19	0.31 [1]	0.80 [1]
				1957 to 1983 -- Japan	-0.18	-0.42	0.32 [1]	0.76 [1]

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1992	Nan and Murry	Residential and commercial electricity demand in California	Annual residential and commercial data on prices, consumption, income and weather from the U.S. Department of Energy, the NOAA and the U.S. Department of Commerce	1970-1987 Residential Commercial	 -.61 -0.78	 -1.18 -0.83	 0.97 1.00	 1.88 1.07

2. Appliance Use/Stock Models

1986	Kahn, Sathaye and Robbins	Residential electricity demand US	Monthly electricity prices and consumption for GSU customers in Texas and Louisiana and stock adjustment/appliance use.	1982 electr. price and consumption) 1982-1992 (for stock adjustment)	-0.06 to -0.16	-0.47 to -0.57	NA	NA
1993	Branch	Residential electricity demand, US	Household panel data for homeowners from the Consumer Expenditure Interview Survey, U.S. Department of Labor.	1984 to 1986	-0.20		0.23	
1985	Morss & Small	Residential electricity demand, AEP.	Survey, billing and weather data for 36,414 households served by AEP	1984	-0.23	-0.38 to -0.43	0.08	0.18
1989	EPRI	Residential electricity demand, various US utilities.	End-use Unit Energy Consumption (UEC) data estimated through the use of Conditional Demand Analysis (CDA) studies by San Diego Gas & Electric, TVA, Nevada Power, TNP and Rochester Gas & Electric.	1985-86 Overall: n Diego Gas and Electric: [2] Space Heating AC Pool Pump Water Heating Unspecified Other	 -0.14 to -0.32 ; high as -0.89 (for TV -0.82 -1.0 to -1.20 -0.101 -0.45 -0.35 0	 	0.10 0.30 0.07 to -0.22 0.45 0 0.18 0	NA NA
1990	Munley, Taylor and Fromby	Residential electricity demand, Washington, D.C.	Data on electricity consumption, price, household characteristics and weather for a sample of rental-occupied residences in Washington, D.C.	1978 -1979	-0.37 to -0.57		0.24 to 0.28	NA

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3. Household Utility/Production Function Models

1990	Haig	Residential electricity demand, Germany	Pooled time series cross sectional data for three types of households in Germany	1966 to 1983	-0.20	-0.25	0.05	0.14

4. Other

1986	Zamkau	Industrial customers electricity demand, HL&P.	Real-time electricity rates for HL & P industrial customers.	1986	-0.03 to -0.22 (by time-of-day)	NA	NA	NA
1989	Nainar	Industrial electricity demand, FL&P.	Price (time-of-use rates) and consumption data for sample of Florida Power & Light large (>4000 KW) industrial customers.	1982-1983	wrong sign and insignificant results		NA	NA
1992	Fisher, Fox-Penner, Greenwood Moss and Phillips	Survey of electricity demand studies, US.	Various [4]	Various [4]			NA	NA
				Survey Estimates:				
				Residential [4]	-0.03 to -0.54	-0.16 to -2.10	0.02 to 2.00	0.12 to 2.20
				Industrial [4],	-0.08 to -3.39	-0.43 to -2.60	NA	NA
				Author Assumptions:				
				Residential	NA	-1.2[3]		
				Commercial	NA	-1.3[3]		
				Industrial	NA	-1.4[3]		
1996	Fillippine	Residential electricity	Pooled/cross section 4 years, 40 cities		Peak period -0.6 Off-peak -0.79	Peak period -0.71 Off-peak -1.92	NA	NA

Notes:

[1] Income elasticity is measured as GDP elasticity.

[2] The author does not specify if these are short-run or long-run.

[3] These estimates are assumed by the authors, rather than calculated on the grounds that "these values are well within the range in the literature, if a bit elastic" (p.139)

[4] See Tables I and II in article.

[5] Excludes other elasticities reported which do not specify whether they are short run and long run.

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