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Matilda Sanders

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Sent:

Friday, December 08, 2006 3:38 PM

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Subject:

Electronic Filing for Post-Hearing Comments of Investor-Owned Utilities

Attachments: Post-Hearing Comments of Investor-Owned Utilities.pdf

Electronic Filing

a. Person responsible for this electronic filing:

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- b. Docket No. 060555-EI Proposed amendments to Rule 25-17.0832, F.A.C., Firm Capacity and Energy Contracts.
- c. Document being filed on behalf of Gulf Power Company, Tampa Electric Company, Progress Energy Florida, and Florida Power & Light Company.
- d. There are a total of 16 pages. e. The document attached for electronic filing are the Post-Hearing Comments of Investor-Owned Utilities. CTR ___ (See attached file: Post-Hearing Comments of Investor-Owned Utilities Docket 060555-EI) ECR ____ GCL ____ Thank you for your assistance in this matter. RCA ____ Lisa Scoles, J.D., M.B.A. Radey Thomas Yon & Clark, P.A. 301 S. Bronough Street, Suite 200 SCR ____ Tallahassee, FL 32301 SGA Receptionist: (850) 425-6654 Direct Line: (850) 425-6662 Fax: (850) 425-6694 Email: <u>lscoles@radeylaw.com</u> OTH KUM Website: www.radeylaw.com

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DOCUMENT NUMBER-DATE

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FPSC-COMMISSION CLERK

ORIGINAL

BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION

| In re: Proposed amendments to) | Docket No.: 060555-EI |
|--------------------------------------|-------------------------|
| Rule 25-17.0832, F.A.C., | |
| Firm Capacity and Energy Contracts) | Filed: December 8, 2006 |

POST-HEARING COMMENTS OF INVESTOR-OWNED UTILITIES

I. Introduction

Florida's four investor-owned utilities ("IOUs") – Gulf Power Company ("Gulf"), Tampa Electric Company ("Tampa Electric"), Progress Energy Florida ("Progress"), and Florida Power & Light Company ("FPL") – together submit these post-hearing comments as authorized by the Florida Public Service Commission ("Commission") at the November 9, 2006, hearing regarding the proposed amendments to Rule 25-17.0832, Florida Administrative Code ("F.A.C.").

The IOUs reiterate they are committed to the goal of encouraging the development of new renewable energy resources in this state in a manner consistent with the best interests of customers. The IOUs seek the same goal as that stated in section 366.92, Florida Statutes, and expressed by the Commission during the hearing – to encourage the development of renewable energy while minimizing costs to customers.

The rules as proposed by Staff differ significantly from the standard offer contracts originally submitted by the IOUs in October 2005 to implement the provisions of section 366.91. The IOUs continue to believe the standard offer contracts, as originally proposed, meet the requirements of section 366.91, Florida Statutes. Nonetheless, the IOUs do not oppose Staff's changes, believing them to be a reasonable means of implementing section

DOCUMENT NUMBER - DATE

366.91. The proposed rule amendments go well beyond the current rules and substantially expand the opportunities for renewable generators by providing a variety of pricing, timing, and operating characteristics for generators to choose from through the portfolio approach.²

II. Florida's Policies Have Promoted the Development of Renewable Generation

Contrary to assertions made at the November 9, 2006, hearing, Florida's policies have promoted the development of renewable generation, and Florida is a leader in energy produced by renewable resources. Opportunities for various types of renewable energy differ from state to state. An assessment of success regarding renewable energy cannot be based simply on raw data indicating the number of MW from renewable facilities or by comparing Florida to other states without understanding the opportunities for particular types of renewable energy in Florida. As Ms. Harlow stated at the hearing, "I would be hopeful that when we look at other states, we would compare Florida to another state that has the same opportunities and renewables we have. I would be hopeful that we would not be throwing out states such as New York that have wonderful opportunities in hydro that we unfortunately do not have." Hearing Transcript, at 142–43.

However, even if raw data is examined and renewable energy types that are not available in the state are included, Florida is doing well. In 2003, Florida ranked 13th overall in renewable electric power, based on kilowatt hours, for all types of renewable energy. See

Mr. Bruner's statement at page 8, lines 7 and 8 of his pre-filed testimony is incorrect when he states the IOUs are "in complete agreement on the proposed rules."

That the proposed rule amendments encourage renewable generation was acknowledged by at least one renewable generator. At the hearing, Mr. Wright stated: "Montenay Dade and Lee County and I support the proposals advanced by the staff and the Commission in the current proposed rules regarding a portfolio approach and setting the subscription limit equal to the capacity of the avoided unit. In my view of the world these are significant steps forward from today's or last year's, anyway, standard offer contracts." Hearing Transcript, at 183.

Attachment 1, Table 18 from the Federal Energy Information Administration ("EIA"), which provides official government energy statistics. Properly excluding those resources that are not available in Florida (e.g., hydroelectric and geothermal), Florida ranked 2nd in renewable electric power in 2003, according to the data in EIA's chart.³

III. Estimated Cost Impact of the Renewables Group's Proposal

The cost impact of the proposals advanced by the Renewables Group on utility customers could be staggering. Under the Renewables Group's proposal, "capacity cost" for a ten year contract would be the revenue requirements for the first ten years for a coal plant with a 25-year life, for a total fixed payment in the first year, including O&M, of \$36.93 per kW/month. The total fixed payment under FPL's draft standard offer contract, which was previously filed in Docket No. 050806-EQ, would be \$18.10 per kW/month. Thus, the difference in capacity payments for the first year would be \$18.83 kW/month (e.g., \$36.93 minus \$18.10) plus \$3.30 per kW/month (e.g., the difference in energy savings due to a 92% capacity factor in FPL's draft standard offer contract versus an 80% capacity factor in the Renewables Group's proposal of \$22.13 per kW/month. Assuming a 25% renewable generation capacity, as proposed by the Renewables Group, this translates to an incremental cost impact to FPL's customers of \$1,379,138,000 in the first year alone.

Further, the so-called successes in other states touted by the renewable generators can be misleading. California "has made virtually no progress [on increasing renewable generation] since 2002" and New York's 24% goal for electricity from renewable sources by 2013 is really only 5% since 19% "is already available through the state's abundant hydroelectric resources." Robert S. Boyd, States Push Renewable Energy, Federal Government Lags, Miami Herald, Nov. 28, 2006.

IV. Additional Comments of the IOUs

The IOUs offer the following additional comments to the issues discussed during the November 9, 2006, hearing. In compliance with the Commission's direction, the IOUs do not reiterate in their entirety their previously filed comments. The IOUs continue to support the positions expressed in those filings.

A. Length of Contract

The IOUs confirm the position set forth in their Supplemental Comments that the contract length of a standard offer contract should be set by the utility.⁴ As Staff has noted, allowing generators to set the contract term exposes customers to risks associated with long-term contracts: the risk that the costs under the contract may be above market prices due to technological advances or changed economic conditions, or that changed circumstances make it economic for a renewable generator to walk away from a facility. Renewable generators always have the option of pursuing longer term contracts through negotiation.

B. Proposed Changes Regarding Carbon Emission Regulations and T-RECs

The IOUs continue to believe addressing possible carbon emission regulation and Tradeable Renewable Energy Credits ("T-RECs") is premature and should not be included in this rulemaking. Further, the IOUs agree with Commission Staff that these are items appropriately addressed – if addressed at all – in the standard offer contract tariffs filed by each utility, not in the rules.

1. Carbon Emission Regulations

No federal legislation has been passed, so it is not possible to predict with any certainty the impact such legislation may have on utilities and on avoided capacity and

⁴ IOUs' Supplemental Comments, at 25-26.

energy costs. As stated in the IOUs' Supplemental Comments and as acknowledged by Mr. Wright, if the legislation affects fuel or emissions, then it would already be addressed by the existing rule in the calculation of the energy payment.⁵ To the extent avoided capacity costs would be affected, there is no basis for determining what the impact would be, what plants would be affected, or how the effect should be addressed in standard offer contracts.

2. Addressing T-RECs is Premature and Unnecessary

As previously explained in the IOUs' Supplemental Comments, the inclusion of language regarding T-RECs is premature, ⁶ given the uncertain nature of the T-REC market. Further, ownership of the T-RECs should be addressed in tariffs, as the IOUs have done in the standard offer contracts submitted in Docket Nos. 050805-EQ, 050806-EQ, 050807-EQ, and 050810-EQ. Those provisions recognize ownership by the renewable generator with a right of first refusal for the purchasing utility. Therefore, nothing further on this issue needs to be addressed in the rules.

C. Contract Terms

The IOUs' Supplemental Comments explained that this rulemaking proceeding is not the appropriate place to consider the extensive changes to the terms of the standard offer contracts suggested by Mr. Kabbani or the extensive revisions to the rules suggested by Mr. Seidman. Staff's questions and the comments of the Commissioners at the hearing suggest that there is no consensus to address these specific provisions in this rulemaking. As Commissioner Carter indicated, many of the specific proposals "don't lend themselves to be

⁵ An analogous situation occurred regarding requirements of the Clean Air Act, which regulated SO₂ emissions. All the IOUs currently include the costs of compliance with SO₂ emission requirements in the calculation of energy payments to renewable generators. No rule change was required.

⁶ IOUs' Supplemental Comments, at 28-29.

in the rule," but rather should be addressed through negotiation. See Transcript Hearing, at 171. Contract terms must provide protection to customers to ensure that renewable generators provide the contracted-for service; namely, that reliable service is provided at the time and in the quantity agreed to in the contract. Contract terms addressing completion milestones, performance factors, completion and performance security requirements, capacity testing, and provisions addressing default and termination of the contract are all designed to ensure performance under the contract and to protect customers if the service agreed to is not provided.

D. A Separate Rule for Renewable Generation is Unnecessary and Inefficient

A separate rule for renewable generators, distinct from the rule for qualifying facilities ("QFs"), is not necessary and would be inefficient. As demonstrated by the rule language proposed by Staff, provisions for renewable generators can easily be added to the existing QF rule. The renewable generators' request for a separate rule is motivated by their advocacy that renewable generators should receive capacity and energy payments in excess of avoided cost, which is improper under controlling statutes.⁷

Having one rule for both QFs and renewable generators is also administratively efficient for the Commission, utilities, and generators. There is no need for the Commission, utility, or generator to determine which rule or tariff is applicable, and when amendments or changes are necessary they can be made once – to the rule or applicable tariffs. A separate rule is unnecessary, is administratively inefficient, and would require changes to all rules in Part III.

⁷ The Supplemental Comments explain why a separate avoided cost standard for renewable energy facilities would be improper under controlling statutes, at 15-18, and why the rule must be based on avoided costs or be subject to federal pre-emption, at 8-10.

E. Separate Renewable Report

The IOUs agree that additional information regarding existing and planned renewable generation would be helpful in understanding more fully the diversity of, amount of, and potential for renewable generation. To address collecting this information, the IOUs propose using the required Ten Year Site Plan ("TYSP") filings as a means of reporting on renewable generation. The utility filings could be revised to include a table summary of renewable generation, which would contain the following:

- 1. A listing of renewable generator types according to the legislative definition of renewables in Florida, as follows:
 - a. Hydrogen from sources other than fossil fuels
 - b. Biomass (Municipal Solid Waste, Landfill Gas, other Biomass)
 - c. Solar Photovoltaic
 - d. Geothermal
 - e. Wind
 - f. Ocean
 - g. Hydroelectric
 - h. Waste Heat from sulfuric acid manufacturing
- 2. A ten year history of capacity and energy purchased from renewable generators by type.
- 3. A ten year projection of contracted-for capacity and energy from renewable generators by type.

The TYSP is the appropriate vehicle for such a report because renewable generators can be considered in the appropriate context – a review of existing and planned generating capacity. In addition, there is no need for a separate hearing, as proposed by the renewable generators, as the Commission's review of the renewable report can be part of the TYSP workshop and renewable generators can provide comments as part of that process.

⁸ The IOUs already provide some information as part of the TYSP. For example, Gulf discussed renewable generation in Chapter 2, section VII of its 2006 TYSP, Progress' TYSP and Tampa Electric's TYSP listed all QFs with which the utilities have purchase contracts, and FPL's TYSP included all purchases from QFs and as-available energy purchases.

F. Renewable Goals Would be Premature

Renewable energy goals should not be established at this time. The IOUs agree with Commission Staff that it is premature to include renewable energy goals as part of this proceeding and that Staff's amendments to Rule 25-17.0832, F.A.C., should be given an opportunity to work before a "command and control" approach is considered. As demonstrated by the EIA chart in Attachment 1, Florida has been successful at promoting renewable generation in the past without establishing arbitrary goals, and such success will accelerate under Staff's proposed rule amendments. Moreover, establishing goals in a vacuum, without regard to what types of renewable generation may be available in Florida, and at what cost, would necessarily be arbitrary, will drive up costs to customers, and is effectively a tax on utility customers to support more expensive generation. Finally, this rulemaking is intended to address standard offer contracts, and its purpose is not to set renewable goals. Thus, setting goals as part of this proceeding would be inappropriate.

G. <u>An Adequate Complaint Procedure Already Exists to Ensure Good Faith</u> Negotiations

During the hearing, there was some discussion as to whether a process was needed for Commission intervention if a renewable generator and an IOU could not negotiate an agreement. Such a process is unnecessary. The rules mandate that utilities negotiate in good

⁹ IOUs' Supplemental Comments, at 30.

A detailed discussion of how Staff's proposed amendments to the rule would encourage renewable generation is contained in the IOUs' Comments, at 6-11.

It should be noted that the Commission has recognized the need to gather information about the availability of renewable resources and has scheduled a workshop in January 2007 as part of its efforts to gather additional information about renewable technologies.

faith.¹² Rule 25-17.0834, F.A.C. Further, renewable generators can file a complaint if they believe the utility is not negotiating in good faith. Under Rule 25-17.0834(2), F.A.C., the Commission is to resolve such complaints within 90 days.

During the hearing, Mr. Trapp indicated, "There are provisions in the rule for a 90-day complaint process, which quite frankly has never been asked to be used." Hearing Transcript, at 192. Research shows that only three complaints for failure to negotiate have ever been filed, and those were all filed in the early 1990s. Further, in no instance did the Commission find that the utility had failed to negotiate in good faith. 13

The IOUs and renewable generators do successfully negotiate contracts. As testament that the current process works, numerous renewable contracts have been successfully negotiated. Progress recently negotiated renewable contracts with G2 Energy and the Florida Biomass Group. Both contracts have unique terms and payment streams that are based on avoided costs and the Value of Deferral ("VOD") method, but that were altered to meet the individual needs of the supplier while protecting Progress and its customers. In addition, nearly all of Progress' QF contracts are negotiated contracts. Tampa Electric recently negotiated a renewal contract with the City of Tampa for the purchase of 3.5 MW of additional capacity and associated energy from the McKay Bay facility.

These experiences illustrate that the negotiation process works and demonstrate that a standard offer contract cannot be developed to meet the needs of every generator. The needs of generators vary due to fuel supply issues, individual financing structures, ownership

Utilities can be penalized for failing "to negotiate or deal in good faith with qualifying facilities" Rule 25-17.0834(3), F.A.C.

In Docket No. 911103-EI, the Commission found that the utility had not failed to negotiate in good faith. In Docket No. 910828-EI, the complaint was voluntarily withdrawn when the generator's planned project fell through. In Docket No. 900383-EQ, the complaint was voluntarily dismissed when the parties reached an agreement.

needs, and other factors, and no one contract will meet the needs of all renewable generators. The best way to encourage more renewable contracts is to encourage negotiation, which has, and will continue to, result in successfully negotiated contracts between renewable generators and the IOUs.

H. Equity Adjustment Should Not be Prohibited

The rule amendments should not include a prohibition against an equity adjustment. ¹⁴ As Commissioner Deason stated at the November 9, 2006, hearing, the equity adjustment should not be prohibited in standard offer contracts and should continue to be handled on a case-by-case basis. *See* Hearing Transcript, at 226. Commissioner Deason noted that Wall Street rating agencies consider a portion of a utility's firm capacity payment as an off-balance sheet obligation, which affects the cost of capital, which affects the rates customers pay. *Id.* A blanket prohibition would be inappropriate.

I. <u>Use of a Statewide Unit Could Be a Disincentive to Some Renewable Generators</u>

During the November 9, 2006, hearing, Commissioner Tew asked whether a statewide coal unit could be a disincentive to renewable generation. Hearing Transcript, at 136-37. The IOUs agree with Ms. Harlow and Mr. Ballinger of Commission Staff, who answered that it could be a disincentive, depending upon the type of projects developed. *Id.* at 137-38. There are likely situations where a statewide coal unit is not optimal for a renewable generator. For example, a municipally-owned waste-to-energy facility that has paid off its debt and is poised to enter into a new contract with a utility may prefer an avoided unit based on a natural gas combustion turbine or combined cycle. The municipal

¹⁴ The IOUs rely on their detailed explanation of why an equity adjustment should be permitted in standard offer contracts for purposes of setting capacity payments, which is contained in the IOUs' Supplemental Comments, at 26-28.

would be paid the higher fuel costs and this would act as a natural hedge to the municipal's overall electric rates, which would also reflect the higher natural gas prices. Additionally, there are other renewable generators (e.g., solar, wind, etc.) whose operating characteristics cannot match a coal unit, and they may be ineligible for capacity payments based on coal, but may be eligible for capacity payments based on combustion turbine or combined cycle.¹⁵

J. Value of Deferral is the Appropriate Method for Determining Capacity Payments

The VOD method – rather than the Revenue Requirements method – is the appropriate method for calculating avoided costs. As explained by Mr. Ballinger during the hearing and as affirmed by Commissioners Arriaga and Carter, VOD is appropriate, as it pays each renewable generator the value of the service received, regardless of the generator's size or length of contract. See Hearing Transcript, at 47-56, 221.

Further, VOD addresses the incentive that suppliers would have to breach the contract under a Revenue Requirements model. The utilities have an obligation to serve, which means that a utility will operate a plant for its entire operating life. On the other hand, a renewable generator has no such obligation, creating the possibility that as the cost of generation rises, a renewable generator will breach the contract if it is in its economic interest to do so. ¹⁶

At the hearing, Mr. Zambo stated that VOD was adopted to address generator reliability, and because renewable generators have proven their reliability, VOD is no longer

Section 366.91(3), Florida Statutes, provides that capacity payments are not required if the operational characteristics of the renewable generator are unlikely to provide capacity value to the utility or the electric grid during the contract term.

The IOUs rely on their explanations of the differences between VOD and the Revenue Requirements method, the problems and the risks associated with the Revenue Requirements method, and why VOD is superior. IOUs' Supplemental Comments, at 10-15.

needed. Hearing Transcript, at 168-69. He is wrong on both counts. As stated by Mr. Ballinger, VOD was not adopted solely to address generator reliability, but also to ensure customers only pay for the value of the service received. *See* Hearing Transcript, at 51. Further, Mr. Seidman, in his pre-filed testimony, acknowledged that a "few" renewable generators "have failed to deliver as contracted in Florida." *See* Testimony of Frank Seidman, at 10. In addition, data from a California Energy Commission report, referenced by Susan Glickman of the Natural Resources Defense Council at the hearing, reinforces that renewable energy contract failures are a genuine concern. The abstract summarizes the report's findings as follows:

The report finds that contract failure rates vary considerably among utilities, across situations, and by technology. Though some of this experience is not entirely relevant to the contract practices of today's electric utilities, the data suggest that a *minimum* overall contract failure rate of 20 to 30 percent should generally be expected for large solicitations conducted over multiple years. Failure rates much higher than these levels are supported by historical experience.

Building a "Margin of Safety" Into Renewable Energy Procurements: A Review of Experience with Contract Failure, California Energy Commission (Jan. 2006) (emphasis in original). Thus, based on the demonstrated risk of contract failure for renewable generators, it is not only appropriate but imperative that the IOUs base their contracts on VOD.

Projects are financeable under VOD. Progress has recently executed two contracts with renewable energy suppliers G2 Energy and the Florida Biomass Group in which the payments are based on VOD. The G2 Energy contract is for 11 MW and the contract with the Florida Biomass Group is for 116 MW. Both of these projects are moving forward and are expected to receive the financing required. Other Progress QF contracts were likewise based upon VOD and were financed, including five contracts with municipal solid waste

facilities, four contracts with facilities using waste wood, and two contracts with facilities that use waste heat.¹⁷ In FPL's service area, the following projects were successfully financed using VOD: Broward North Solid Waste, Broward South Solid Waste, Palm Beach Solid Waste, and Bio Energy. Additionally, the Hillsborough County Resource Recovery Facility was successfully financed using VOD in Tampa Electric's service area.

V. Conclusion

For the reasons expressed herein, in the IOUs' Comments, in the IOUs' Supplemental Comments, and at the November 9, 2006, hearing, the proposed rule amendments should be adopted as proposed with no further changes. The proposed rule amendments fairly balance the continued development of renewable energy with the costs to customers. The proposals by the renewable generators, which expose customers to increased costs or risks or both, should be rejected.

Respectfully submitted,

s/ Susan F. Clark

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Attorney for the Investor-Owned Utilities

¹⁷ Four of the contracts cited as examples have since expired.

CERTIFICATE OF SERVICE

I HEREBY CERTIFY that a true and correct copy of the foregoing Post-Hearing

Comments of the Investor-Owned Utilities has been furnished by U.S. Mail this 8th day of

December 2006, to the following:

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s/ Susan F. Clark
Susan F. Clark

Attachment 1

| Table 18. Renewal | | Sector rect Gen | C. ation by Entl | SJ Source and Stat | 10, 4003 | | | | } |
|--------------------------|---------------|-----------------|---------------------------------------|--------------------|----------|------------|-------------|------------------------|-------------|
| (1 nousand knowat | tinours) | | | | | | | | |
| | | Hydroelectric | MSW / | | | | Wood / Wood | | |
| State | Geothermal | Conventional | | Other Biomass* | Solar | Wind | Waste | Total | |
| Washington | | 71,701,843 | 208,517 | 14,333 | | 603,674 | 595,968 | 73,124,335 | |
| California | 12,981,763 | 36,369,789 | 1,637,983 | | 533,606 | 3,895,431 | 2,767,418 | 58,596,348 | |
| Oregon | | 33,250,332 | 109,045 | | | 443,617 | 294,763 | 34,114,347 | |
| New York | | 24,188,523 | 1,890,342 | | | 41,201 | 235,338 | 26,358,371 | |
| Alabama | | 12,664,867 | · · · · · · · · · · · · · · · · · · · | | | | 181,745 | 12,846,612 | |
| Tennessee | | 11,087,048 | 28,088 | | | 3,933 | | 11,119,069 | |
| Montana | | 8,701,772 | | | | | | 8,701,772 | |
| Idaho | | 8,354,034 | | | | | 86,759 | 8,440,793 | |
| Arizona | | 7,074,984 | 41,031 | | 395 | | 00,100 | 7,116,410 | |
| North Carolina | | 6,328,684 | 104,797 | | | | 367,733 | 6,843,986 | |
| Pennsylvania | | 3,346,267 | 1,747,127 | 910 | | 111,521 | 240,765 | 5,446,590 | |
| South Dakota | | 4,276,303 | 2,717,127 | 710 | | 44,249 | 240,703 | 4,320,552 | |
| Florida | | 262,667 | 3,127,877 | 301,213 | | 11,247 | 486,417 | 4,178,174 | |
| Georgia | | 4,112,790 | 16,798 | 501,215 | | | 400,417 | 4,129,588 | |
| Kentucky | | 3,948,052 | 10,770 | 21,672 | | | | 3,969,724 | |
| Maine | | 2,150,143 | 230,078 | 63,093 | | | 1 510 700 | | |
| Texas | | 896,539 | 177,196 | 126,752 | | 2,569,853 | 1,519,788 | 3,963,102 3,770,340 | |
| | | 3,664,637 | 22,091 | 120,732 | | 2,307,633 | | | |
| South Carolina Maryland | | 2,646,984 | 629,254 | | | | | 3,686,728 | |
| | | 1,310,430 | 658,861 | 124 751 | | 2.600 | 1.018.406 | 3,276,238 | |
| Michigan | <u> </u> | | | 124,751 | | 2,660 | 1,018,495 | 3,115,197 | |
| Massachusetts | | 1,064,426 | 1,905,588 | 1,361 | | | 119,534 | 3,090,909 | |
| Virginia | 1.065.711 | 1,775,702 | 715,173 | | | | 370,861 | 2,861,736 | |
| Nevada | 1,065,711 | 1,756,705 | | 00.000 | | | | 2,822,416 | |
| Arkansas | ļ | 2,654,618 | 755 143 | 89,960 | | 077.740 | 100 61 5 | 2,744,578 | |
| Minnesota | | 721,287 | 755,142 | | | 977,760 | 100,615 | 2,554,804 | |
| Wisconsin | | 1,653,066 | 387,306 | 71,629 | | 97,580 | 61,088 | 2,270,669 | |
| Connecticut | ļ | 564,416 | 1,400,718 | 165,224 | | | | 2,130,358 | |
| New Hampshire | ļ | 1,169,528 | 218,880 | | | | 635,187 | 2,023,595 | |
| lowa | <u> </u> | 788,593 | 97,548 | 1,149 | | 981,970 | | 1,869,260 | |
| Oklahoma | | 1,798,412 | | | | 54,470 | | 1,852,882 | |
| North Dakota | | 1,723,904 | | | | 58,878 | | 1,782,782 | |
| Alaska | | 1,582,536 | | | | | | 1,582,536 | |
| Vermont | | 1,147,962 | | | | 10,829 | 394,307 | 1,553,098 | |
| Colorado | | 1,262,197 | | 31,470 | | 147,109 | | 1,440,776 | |
| New Jersey | | 38,891 | 1,272,953 | 125,485 | | | | 1,437,329 | |
| Nebraska | | 980,110 | 27,090 | 18,906 | | 38,221 | | 1,064,327 | |
| Illinois | | 138,497 | 595,850 | 272,343 | | 18,024 | | 1,024,714 | |
| Wyoming | | 593,555 | | | | 366,478 | | 960,033 | |
| Louisiana | | 891,991 | | 60,663 | | | | 952,654 | |
| West Virginia | | 630,353 | | 20,623 | | 169,762 | 157 | 820,895 | |
| Missouri | | 652,477 | | 121,112 | | | 179 | 773,768 | |
| Hawaii | 178,292 | 40,464 | 333,821 | 174,455 | | 1,572 | | 728,604 | |
| Utah | 198,465 | 421,339 | 9,241 | | | | | 629,045 | |
| Ohio | | 510,835 | 27,184 | | | | 50,561 | 588,580 | |
| Indiana | | 423,953 | 85,278 | | | | | 509,231 | |
| Kansas | | 12,435 | | | | 365,939 | | 378,374 | |
| New Mexico | | 170,699 | | | | 182,735 | | 353,434 | |
| Rhode Island | | 6,021 | 101,768 | | | | | 107,789 | |
| | | -, | , | | | | | | |
| Delaware | | | | | | | | | |
| District of Columbia | | | | | | | | | |
| Mississippi | | | | | | | | | |
| | | | | | | | | | |
| otál | 14,424,231 | 271,511,660 | 18,562,625 | 2,279,791 | 534,001 | 11,187,466 | 9,527,678 | 328,027,452 | |
| Landa Lannada | | wante times and | . 4h Li | | | | | | |

Total | 14,424,231 | 2/1,511,600 | 18,562,625 | 2,279,791 | 534,001 | 11,187,466 | 9,527,678 | 328,027,452 |

"Agriculture byproducts/crops, sludge waste, tires and other biomass solids, liquids and gases.

Note: The electric power sector comprises electricity-only and combined-heat-power (CHP) plants within North American Classification System (NAICS) 22 category whose primary business is to sell electricity, or electricity and heat, to the public. Blank cell indicates the state has no data to report for that energy source. Totals may not equal sum of components due to independent rounding.

Sources: Energy Information Administration, Form EIA-906, "Power Plant Report."