Memorandum

To: **Energy, Utilities & Technology Committee**

From: **Maine's Waste to Energy Working Group represented by:**
Kevin Roche, ecomaine
Joe Kazar, MMWAC
Ken Robbins, MERC
Greg Lounder, Municipal Review Committee for PERC

Cc: **Environment and Natural Resources Committee**

Date: **January 19, 2012**

Re: **LD 425 An Act to Stimulate Demand for Renewable Resources**

We represent Maine's four Waste-to-Energy (WTE) facilities. Our facilities provide solid waste disposal for nearly 300 Maine communities, representing over 800,000 residents. We handle over 800,000 tons of municipal solid waste annually. Our facilities use that solid waste supply to annually generate over 400,000 megawatt hours of reliable, renewable power to meet Maine's energy needs. Proceeds from the sale of energy defray our operating costs and reduce the tipping fees we must charge for disposal of municipal waste.

WTE Economic Study

This fall, we worked with Professor Todd Gabe of the University of Maine to conduct an analysis of the economic impact of WTE on the Maine economy. The Report is attached. Among its conclusions are that WTE provides 228 direct (at the four facilities) and 369 indirect jobs with a total labor impact of $33.9 million. The total statewide annual economic contribution of the four facilities is $137 million.

LD 425

Last year we brought forward LD 425 for your consideration. As we told you last year, the goals of this proposal are to support the generation of reliable, sustainable and renewable energy here in Maine, align Maine energy policy with its solid waste hierarchy (38 § MRSA 2101), strengthen the operations of Maine's four WTE facilities, and provide revenues that may allow WTE facilities to avoid increasing tipping fees paid by municipalities, easing pressure on the property tax.

We appreciate the serious consideration given to this bill by the Committee and the decision to carry it over to this year. We continue to think this would be good policy for Maine, however we are aware of concerns around the RPS. For that reason, we have been exploring options.

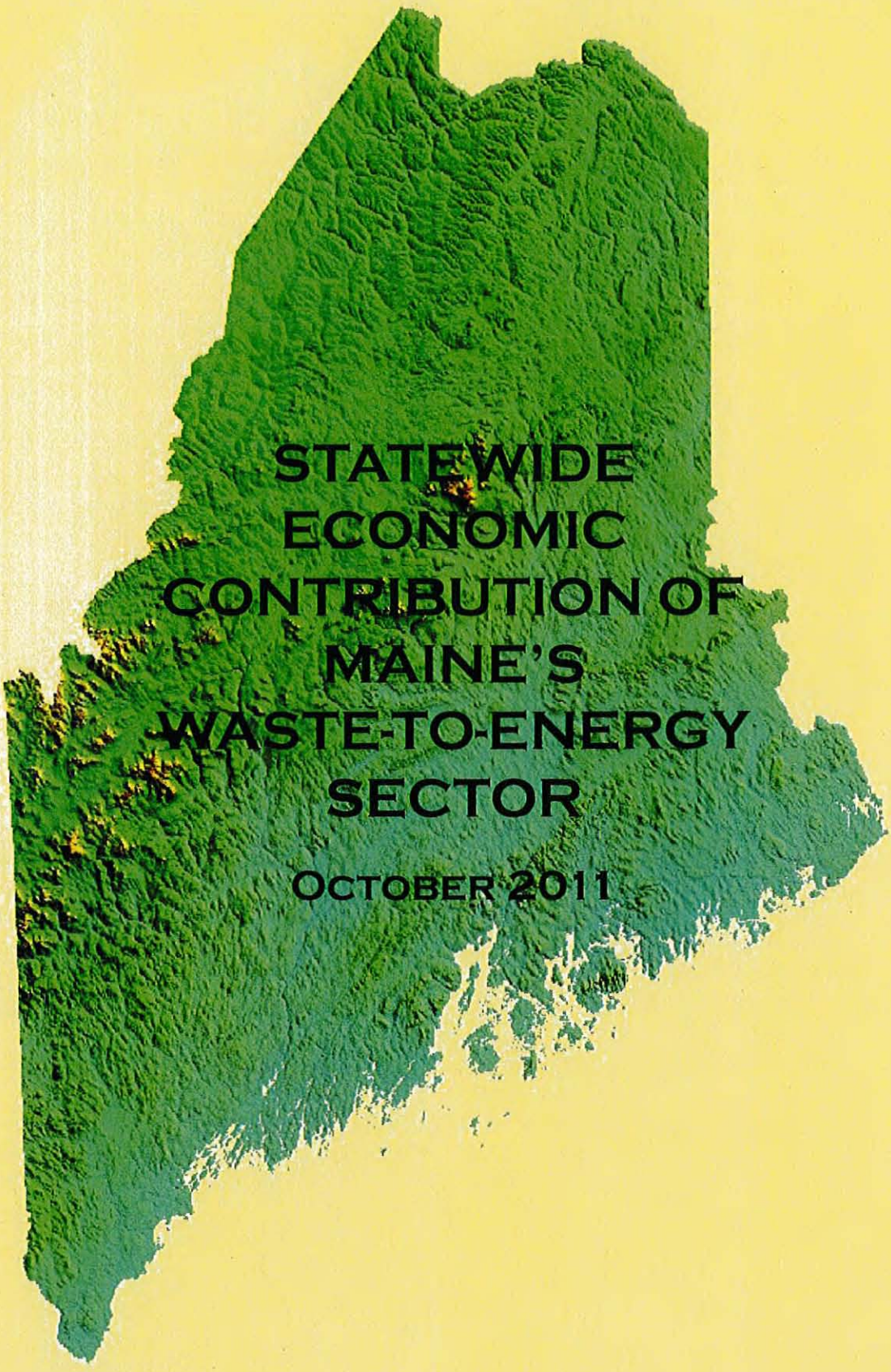
We met with the Governor's staff and the Office of Energy Independence and Security over the summer. They visited all 4 facilities and have expressed their strong support for the solid waste hierarchy and WTE facilities. We appreciate their support and have discussed possible ways to assist WTE.

One possibility would be long term contracts for WTE paired with landfill fees. The fees would offset any cost increase to ratepayers created by the contracts. Benefits of this approach include support for the solid waste hierarchy by discouraging landfilling of MSW and support for WTE facilities, which is the ultimate goal of LD 425.

Currently, the policy discussions around the RPS and solid waste are in flux. The PUC's RPS Report will be coming out the end of this month. Solid Waste issues that could significantly impact WTE remain unresolved and will be addressed this year. They include the possible expansion of the Crossroad landfill and potential changes in state ownership of landfills.

Do to the complexity of these issues and their overlapping jurisdictions, we request a Joint Meeting of the Energy and Environment Committees to consider them. This is the same suggestion made by Carlie McLean of the Governor's Office to the Environment Committee. Such a meeting would advance the understanding of both Committees and facilitate policy discussions around the intersection of solid waste and energy policy.

This is an issue that will require further work to resolve. We are committed to working with the Committees, the Governor's Office of Energy Independence and Security, and other interested parties to accomplish that.



STATEWIDE ECONOMIC CONTRIBUTION OF MAINE'S WASTE-TO-ENERGY SECTOR

OCTOBER 2011

STATEWIDE ECONOMIC CONTRIBUTION OF MAINE'S WASTE-TO-ENERGY SECTOR

October 2011

Todd Gabe, Ph.D.

For the Maine Waste-to-Energy Working Group, including:

ecomaine, Portland
Maine Energy Recovery Company, Biddeford
Mid-Maine Waste Action Corporation, Auburn
Penobscot Energy Recovery Company, Orrington

SUMMARY OF ECONOMIC IMPACT RESULTS

Total statewide annual economic contribution - $137.0 million

→ Direct jobs impact – 228 workers in the four waste-to-energy facilities

→ Direct labor income impact - $19.5 million in wages, salaries and benefits paid by the facilities ($85,691 per worker)

→ Jobs multiplier effects – 369 full- and part-time Maine jobs outside the waste-to-energy sector

→ Labor income multiplier effects - $14.3 million in wages, salaries and benefits received by Maine workers outside the waste-to-energy sector

→ Total jobs impact – 597 full- and part-time jobs located across Maine. Waste-to-energy employment multiplier (ratio of total jobs to direct jobs) of 2.62 is among the highest of all Maine industries.

→ Total labor income impact - $33.9 million in wages, salaries and benefits received by Maine workers ($56,713 per worker)

INTRODUCTION

There are four waste-to-energy facilities located in Maine: ecomaine in Portland, Maine Energy Recovery Company (MERC) in Biddeford, Mid-Maine Waste Action Corporation (MMWAC) in Auburn, and Penobscot Energy Recovery Company (PERC) in Orrington. These facilities collectively process 830,000 tons of waste per year and produce an estimated 474,700 MWhs/yr of electricity.[1] Maine is one of 24 states with a waste-to-energy sector and, as of 2010, Maine ranked 9th nationally (of these 24 states) in terms of the number of waste-to-energy facilities, and 11th nationally in terms of "trash capacity" per day.[2]

The purpose of this study is to examine the economic contribution of Maine's waste-to-energy facilities. Economic contribution is defined as the revenue, employment and labor income (e.g., wages, salaries and benefits) that are directly associated with the four facilities, as well as the multiplier effects supported by the purchases of businesses (i.e., indirect impacts) and workers (i.e., induced impacts) related to the waste-to-energy industry. The results presented in this report are based on information provided by the waste-to-energy facilities on their annual operations for the most recent year available. An economic impact (IMPLAN) model of the overall Maine economy –and counties where the facilities are located –is used to estimate multiplier effects.

Table 1 provides an economic overview of Maine's waste-to-energy sector. It is made up of four facilities, located across the state, which generate a total of $93.4 million in annual revenue. The facilities range in annual revenue from a low of $6.3 million (MMWAC) to a high of $40 million (PERC). Maine's waste-to-energy sector directly supports 228 jobs, which provide $19.5 million in labor income (e.g., wages, salaries and benefits), an average of $85,691 per worker. The relatively high average wages and salaries paid to workers directly employed by Maine's waste-to-energy facilities are a reflection of high productivity and the specialized technical and/or business skills required to work in the industry. Some of the occupations more

Table 1. Overview of Maine's Waste-to-Energy Sector

Facility	Location	Revenue	Employment	Labor Income
ecomaine	Portland	$23,563,700	46	$4,179,800
Maine Energy Recovery Company (MERC)	Biddeford	$23,506,562	79	$6,409,669
Mid-Maine Waste Action Corporation (MMWAC)	Auburn	$6,313,849	28	$2,448,023
Penobscot Energy Recovery Company (PERC)	Orrington	$40,000,000	75	$6,500,000
	Total	$93,384,111	228	$19,537,492

Notes: Revenue, employment and payroll figures were provided (for the most recent year available) by ecomaine, MERC, MMWAC and PERC. Employment figures include full- and part-time positions. Labor income figures include wages, salaries and benefits.

1 These figures are from an April 2011 report, titled "Waste to Energy Power," by the State of Maine Governor's Office of Energy Independence and Security.

2 These figures are from a U.S. Energy Recovery Council report, titled "The 2010 ERC Directory of Waste-to-Energy Plants."

commonly employed by the waste-to-energy facilities include power plant operators, electrical engineers, industrial machinery mechanics, computer systems analysts, welders, electricians, attorneys, accountants, refractory workers, masons, and heavy equipment operators.[3]

STATEWIDE ECONOMIC IMPACT ANALYSIS

Table 2 presents results on the statewide economic contribution of Maine's waste-to-energy sector. The industry's "direct impact" is the annual revenue, employment, and labor income associated with the four facilities, as shown in Table 1.

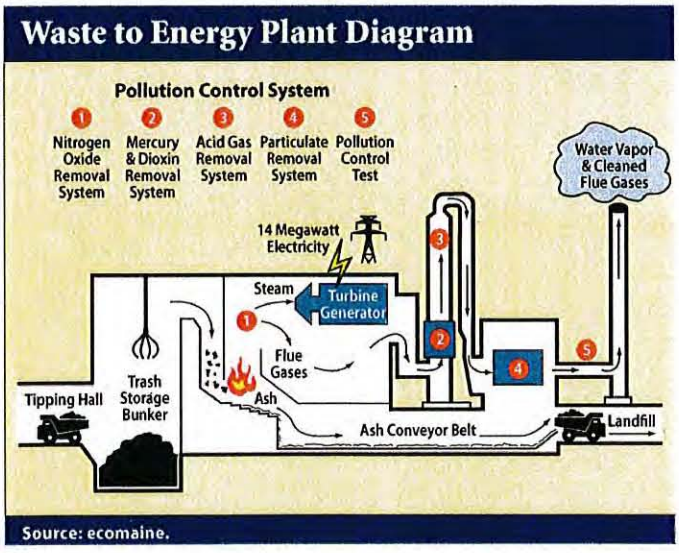
Table 2. Statewide Economic Contribution of Maine's Waste-to-Energy Sector

	Direct Impact	Indirect Impact	Induced Impact	Total Impact
Revenue	$93,384,111	$20,606,027	$23,042,375	$137,032,513
Employment	228	160	209	597
Labor Income	$19,537,492	$6,483,911	$7,836,364	$33,857,767

Notes: Direct revenue, employment and labor income figures were provided (for the most recent year available) by ecomaine, MERC, MMWAC and PERC. Multiplier effects were estimated using an economic impact (IMPLAN) model of the Maine economy.

The indirect and induced impacts, collectively referred to as the "multiplier effects," are the additional revenue, employment, and labor income in Maine that are supported by the purchases of businesses (i.e., indirect) and workers (i.e., induced) related to the waste-to-energy industry.

The IMPLAN model, used to estimate the multiplier effects, is an input-output framework that traces the flows of expenditures and income through the Maine economy with a complex system of accounts that are uniquely tailored to the region.[4] Underlying these accounts is information regarding transactions occurring among industries located in Maine, the spending patterns of households, and transactions occurring between the state and the rest of the world. Some of the data sources used to develop the IMPLAN model include County Business Patterns of the U.S. Census Bureau, Regional Economic Information System (REIS) data, and input-output accounts from the U.S. Bureau of Economic Analysis, and ES-202 statistics from the U.S. Bureau of Labor Statistics.



Including multiplier effects, the Maine waste-to-energy industry has an annual statewide economic contribution of an estimated $137.0 million in revenue, 597 full- and part-time jobs, and $33.9 million in labor income.[5] These figures indicate that

3 This list of occupations was assembled using information from the National Industry-Occupational Employment Matrix developed by the U.S. Bureau of Labor Statistics and job titles provided by the Maine Waste-to-Energy Working Group.

4 Version 3.0 of the IMPLAN model has information on 440 sectors of the economy. The waste-to-energy industry is classified in the economic impact analysis as a "hybrid" of the IMPLAN sectors "Electric Power Generation, Transmission and Distribution" and "Waste Management and Remediation Services." The exact weights applied to these IMPLAN sectors are determined using the direct revenue, employment and labor income figures provided by each of the waste-to-energy facilities.

5 The employment figures in the IMPLAN model are based on a headcount and do not differentiate between full and part-time workers. The labor income figures in IMPLAN include wages and salaries, as well as employer-paid benefits.

the workers directly and indirectly impacted by the waste-to-energy sector earn an average of $56,713 in labor income per year. As noted above, the individuals directly employed by the waste-to-energy facilities earn an average of $85,691 per worker, an amount that reflects the high productivity and technical nature of the industry's labor demands. The workers employed outside of the four facilities (i.e., supported by the purchases of businesses and workers related to the waste-to-energy sector) earn an average of $38,808 in labor income per year.[6] As shown below, the jobs outside of the waste-to-energy sector cut across the entire Maine economy, which includes a mix of high-skilled and low-skilled occupations.

Table 3. Maine Statewide Employment Multipliers by 2-Digit NAICS Category

NAICS Category	Industry Description	Employment Multiplier
22 & 56	Waste-to-Energy Sector	2.62
11	Agriculture, Forestry, Fishing and Hunting	1.44
21	Mining, Quarrying, and Oil and Gas Extraction	1.80
22	Utilities	2.61
23	Construction	1.64
31-33	Manufacturing	2.66
42	Wholesale Trade	1.96
44-45	Retail Trade	1.29
48-49	Transportation and Warehousing	1.74
51	Information	2.22
52	Finance and Insurance	2.35
53	Real Estate and Rental and Leasing	1.82
54	Professional, Scientific, and Technical Services	1.69
55	Management of Companies and Enterprises	2.22
56	Administrative and Support and Waste Management and Remediation Services	1.44
61	Educational Services	1.42
62	Health Care and Social Assistance	1.66
71	Arts, Entertainment, and Recreation	1.37
72	Accommodation and Food Services	1.37
81	Other Services (except Public Administration)	1.39

Source: Maine IMPLAN model.

Note: The waste-to-energy sector is a "hybrid" of the Utilities, and Administrative and Support and Waste Management and Remediation Services major industrial categories.

The revenue multiplier of 1.47, defined as the ratio of total revenue ($137.0 million) to direct revenue ($93.4 million), suggests that every $1.00 of sales revenue in the industry supports a total of $1.47 in statewide economic activity; that is, the "initial" $1.00 in revenue plus an additional $0.47. The employment multiplier of 2.62, calculated as the ratio of total (597 jobs) to direct (228 jobs) employment, suggests that the economic activity associated with each person directly employed in the waste-to-energy industry supports a total of 2.62 Maine jobs; that is, the person in one of the state's four waste-to-energy facilities and an additional 1.62 full- or part-time jobs elsewhere in the state.[7]

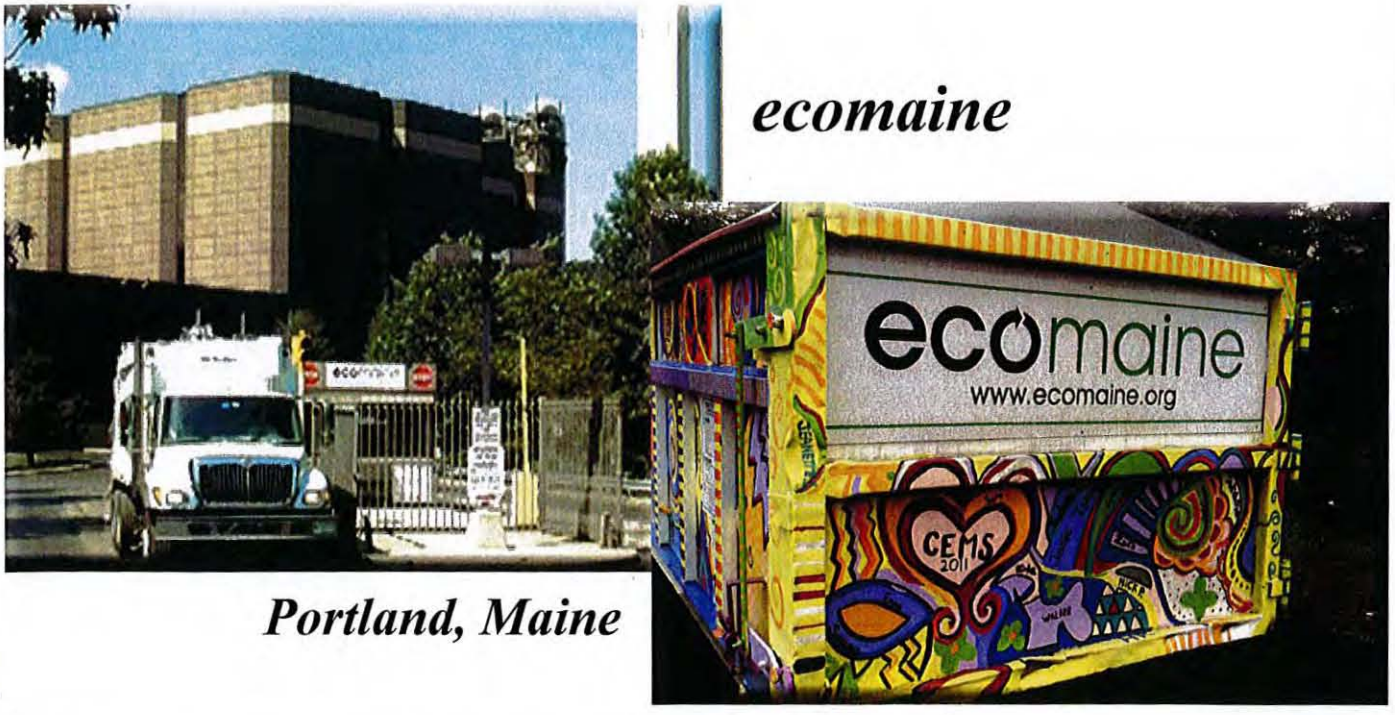
To put these figures into perspective, Table 3 shows a list of statewide employment multipliers by major (i.e., 2 digit NAICS) industrial category. The size of an industry's employment multiplier depends on – among other factors – the amount of revenue generated per worker (i.e., high productivity increases the employment multiplier), the extent to which the industry purchases goods and services produced in Maine (i.e., more in-state purchases increases the employment multiplier), and the full- versus part-time nature of employment in the

6 This average labor income figure of $38,808 is estimated by the Maine IMPLAN model. The average labor income of workers inside the waste-to-energy facilities ($85,691) and outside of the facilities ($38,808) are used to estimate the average labor income of workers directly and indirectly impacted by the waste-to-energy sector ($56,713).

7 A 2009 study ("The Existing and Potential Economic Impact of the Energy-from-Waste Industry in Florida") by Thomas Conoscenti found that every direct job in the Florida waste-to-energy sector would support an additional 1.30 jobs elsewhere in the state. This employment multiplier of 2.30 for Florida is similar to, but slightly lower than, the statewide employment multiplier of 2.62 estimated for the Maine waste-to-energy sector.

industry (i.e., sectors with more part-time workers have lower employment multipliers). In the case of Maine's waste-to-energy sector, the relatively large employment multiplier of 2.62 is explained, in part, by the high productivity of workers directly employed by the facilities (average revenue of $409,579 per worker). Although employment multipliers vary across individual sectors within the major industrial categories, the waste-to-energy sector has an employment multiplier that is similar to those estimated for the broadly-defined Manufacturing (also characterized by high amounts of revenue per worker) and Utilities sectors. The employment multiplier estimated for the waste-to-energy sector is larger than the multipliers for Retail and Wholesale Trade, and several of the service-related major industrial categories (e.g., Educational Services, Healthcare and Social Assistance, Administrative and Support and Waste Management and Remediation Services). Worker productivity is considerably lower in these broad industries of the Maine economy as compared to the average amount of revenue generated per worker in the waste-to-energy facilities.

In Tables 4, 5 and 6, we show revenue, employment, and labor income impact results by major industrial category. As indicated in footnote 4, the waste-to-energy facilities are classified in the economic impact model as a "hybrid" of IMPLAN sectors "Electric Power Generation, Transmission and Distribution" (part of the "Utilities" 2-digit NAICS category) and "Waste Management and Remediation Services" (part of the "Administrative and Support and Waste Management and Remediation" 2-digit NAICS category). Based on the revenue figures shown in Table 4, the sectors that are most heavily impacted by the spending of businesses and workers related to the waste-to-energy facilities include Finance and Insurance; Healthcare and Social Assistance; and Professional, Scientific, and Technical Services. Sectors with indirect impacts that substantially exceed the induced impacts (e.g., Transportation and Warehousing; Construction; and Professional, Scientific, and Technical Services) are those industries more apt to sell goods and services to businesses related to the waste-to-energy facilities, as opposed to their workers. On the other hand, sectors that primarily sell goods and services to individuals (e.g., Educational Services; Healthcare and Social Assistance; and Retail Trade) are characterized by induced impacts that exceed the indirect impacts.



Portland, Maine

Table 4. Statewide Economic Contribution of Maine's Waste-to-Energy Sector: Revenue Impacts by 2-digit NAICS Category

NAICS Category	Industry Description	Direct Impact	Indirect Impact	Induced Impact	Total Impact
22 & 56	Waste-to-Energy Sector	$93,384,111	*	*	$93,384,111
11	Agriculture, Forestry, Fishing and Hunting	$0	$32,427	$98,618	$131,045
21	Mining, Quarrying, and Oil and Gas Extraction	$0	$233,068	$12,648	$245,716
22	Utilities	**	$113,358	$304,288	$417,646
23	Construction	$0	$1,958,520	$208,081	$2,166,601
31-33	Manufacturing	$0	$1,875,868	$1,092,974	$2,968,842
42	Wholesale Trade	$0	$596,444	$835,713	$1,432,157
44-45	Retail Trade	$0	$114,236	$2,327,477	$2,441,713
48-49	Transportation and Warehousing	$0	$3,510,279	$549,578	$4,059,857
51	Information	$0	$1,285,251	$651,765	$1,937,016
52	Finance and Insurance	$0	$2,466,331	$3,108,796	$5,575,127
53	Real Estate and Rental and Leasing	$0	$951,063	$1,235,356	$2,186,419
54	Professional, Scientific, and Technical Services	$0	$2,840,985	$804,088	$3,645,073
55	Management of Companies and Enterprises	$0	$299,372	$178,605	$477,977
56	Administrative & Support and Waste Management & Remediation Services	**	$2,077,252	$514,375	$2,591,627
61	Educational Services	$0	$10,717	$433,906	$444,623
62	Health Care and Social Assistance	$0	$177	$4,586,794	$4,586,971
71	Arts, Entertainment, and Recreation	$0	$176,436	$381,043	$557,479
72	Accommodation and Food Services	$0	$1,395,234	$1,341,805	$2,737,039
81	Other Services (except Public Administration)	$0	$362,679	$1,012,089	$1,374,768
n.a.	n.a.	$0	$306,329	$3,364,374	$3,670,703
	Total:	$93,384,111	$20,606,027	$23,042,375	$137,032,513

Notes: Direct revenue figures were provided (for the most recent year available) by ecomaine, MERC, MMWAC and PERC. Multiplier effects were estimated using an economic impact (IMPLAN) model of the Maine economy.

* The indirect and induced impacts related to the waste-to-energy facilities are captured in the multiplier effects associated with the Utilities, and Administrative and Support and Waste Management and Remediation Services industries.

** The direct impacts related to the waste-to-energy facilities, which are classified in the study as a "hybrid" of the Utilities, and Administrative and Support and Waste Management and Remediation Services major industrial categories, are shown in the first row of figures.

Table 5. Statewide Economic Contribution of Maine's Waste-to-Energy Sector: Employment Impacts by 2-digit NAICS Category

NAICS Category	Industry Description	Direct Impact	Indirect Impact	Induced Impact	Total Impact
22 & 56	Waste-to-Energy Sector	228	*	*	228
11	Agriculture, Forestry, Fishing and Hunting	0.0	0.4	1.4	1.8
21	Mining, Quarrying, and Oil and Gas Extraction	0.0	1.0	0.0	1.0
22	Utilities	**	0.2	0.5	0.7
23	Construction	0.0	22.2	2.2	24.4
31-33	Manufacturing	0.0	1.4	1.2	2.6
42	Wholesale Trade	0.0	3.8	5.4	9.3
44-45	Retail Trade	0.0	2.0	41.9	44.0
48-49	Transportation and Warehousing	0.0	17.9	4.9	22.8
51	Information	0.0	7.3	3.0	10.3
52	Finance and Insurance	0.0	10.8	13.2	24.0
53	Real Estate and Rental and Leasing	0.0	7.3	12.2	19.5
54	Professional, Scientific, and Technical Services	0.0	25.6	8.0	33.6
55	Management of Companies and Enterprises	0.0	1.7	1.0	2.7
56	Administrative & Support and Waste Management & Remediation Services	**	23.8	7.9	31.7
61	Educational Services	0.0	0.1	7.2	7.3
62	Health Care and Social Assistance	0.0	0.0	46.3	46.3
71	Arts, Entertainment, and Recreation	0.0	4.5	7.8	12.3
72	Accommodation and Food Services	0.0	23.8	22.9	46.7
81	Other Services (except Public Administration)	0.0	4.8	20.1	24.9
n.a.	n.a.	0.0	1.3	1.9	3.2
	Total:	228	160	209	597

Notes: Direct employment figures were provided (for the most recent year available) by ecomaine, MERC, MMWAC and PERC. Multiplier effects were estimated using an economic impact (IMPLAN) model of the Maine economy.

* The indirect and induced impacts related to the waste-to-energy facilities are captured in the multiplier effects associated with the Utilities, and Administrative and Support and Waste Management and Remediation Services industries.

** The direct impacts related to the waste-to-energy facilities, which are classified in the study as a "hybrid" of the Utilities, and Administrative and Support and Waste Management and Remediation Services major industrial categories, are shown in the first row of figures.

Table 6. Statewide Economic Contribution of Maine's Waste-to-Energy Sector: Labor Income Impacts by 2-digit NAICS Category

NAICS Category	Industry Description	Direct Impact	Indirect Impact	Induced Impact	Total Impact
22 & 56	Waste-to-Energy Sector	$19,537,492	*	*	$19,537,492
11	Agriculture, Forestry, Fishing and Hunting	$0	$9,402	$33,816	$43,218
21	Mining, Quarrying, and Oil and Gas Extraction	$0	$31,426	$1,760	$33,186
22	Utilities	**	$23,127	$61,960	$85,087
23	Construction	$0	$732,612	$77,317	$809,929
31-33	Manufacturing	$0	$129,200	$121,928	$251,128
42	Wholesale Trade	$0	$243,186	$340,742	$583,928
44-45	Retail Trade	$0	$63,035	$1,236,796	$1,299,832
48-49	Transportation and Warehousing	$0	$1,152,026	$240,600	$1,392,627
51	Information	$0	$356,110	$160,862	$516,973
52	Finance and Insurance	$0	$627,278	$815,136	$1,442,414
53	Real Estate and Rental and Leasing	$0	$137,235	$151,213	$288,448
54	Professional, Scientific, and Technical Services	$0	$1,226,028	$380,499	$1,606,527
55	Management of Companies and Enterprises	$0	$138,470	$82,611	$221,081
56	Administrative & Support and Waste Management & Remediation Services	**	$763,029	$227,792	$990,821
61	Educational Services	$0	$5,131	$225,147	$230,278
62	Health Care and Social Assistance	$0	$70	$2,374,521	$2,374,591
71	Arts, Entertainment, and Recreation	$0	$80,417	$151,958	$232,375
72	Accommodation and Food Services	$0	$504,105	$484,218	$988,323
81	Other Services (except Public Administration)	$0	$182,738	$541,636	$724,374
n.a.	n.a.	$0	$79,285	$125,850	$205,135
	Total:	$19,537,492	$6,483,911	$7,836,364	$33,857,767

Notes: Direct employment figures were provided (for the most recent year available) by ecomaine, MERC, MMWAC and PERC. Multiplier effects were estimated using an economic impact (IMPLAN) model of the Maine economy.

* The indirect and induced impacts related to the waste-to-energy facilities are captured in the multiplier effects associated with the Utilities, and Administrative and Support and Waste Management and Remediation Services industries.

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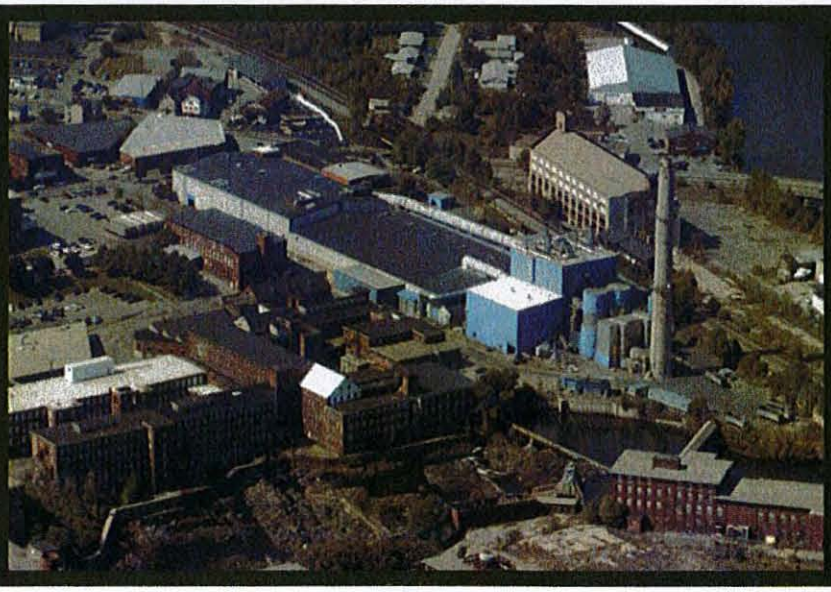
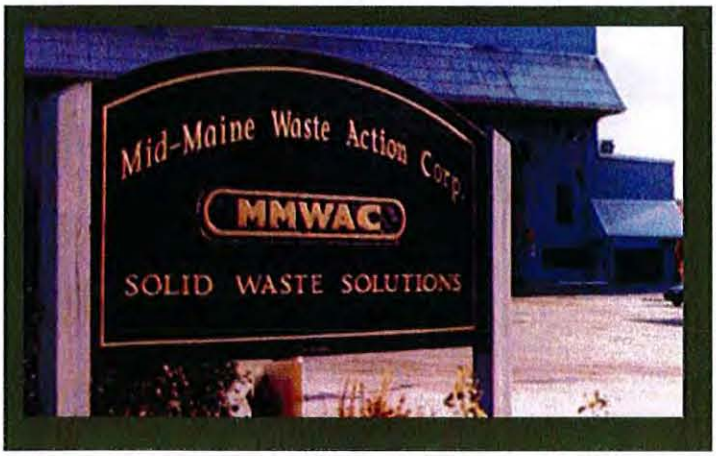


Maine Energy Recovery Company

Biddeford, Maine

REGIONAL ECONOMIC IMPACT ANALYSIS

Tables 7 to 10 present a summary of the results from an analysis of the regional economic contributions of the individual waste-to-energy facilities. The "region" of interest is the county where the facility is located. In each of the tables, the direct impacts are the revenue, employment and income that are associated with the facility's annual operations. The multiplier effects of these facilities are estimated using separate county-level economic impact (IMPLAN) models.



The ecomaine facility, located in Portland (Cumberland County), generates about $23.6 million in annual revenue, and it directly employs 46 workers that receive $4.2 million in labor income per year. Including multiplier effects, ecomaine has a county-level annual economic contribution of an estimated $34.2 million in revenue, 128 full- and part-time jobs, and $7.6 million in labor income.

The Maine Energy Recovery Company (MERC) reports annual revenues of $23.5 million, and the Biddeford-based (York County) facility directly employs 79 workers that receive $6.4 million in labor income. MERC has a total county-level annual economic contribution, including multiplier effects, of an estimated $32.1 million in revenue, 167 full- and part-time jobs, and $9.2 million in labor income.

Located in Auburn (Androscoggin County), the Mid-Maine Waste Action Corporation (MMWAC) brings in $6.3 million in revenue per year, and the facility directly employs 28 workers that receive $2.4 million in labor income. Including multiplier effects, MMWAC's total county-level annual economic contribution is an estimated $10.5 million in revenue, 66 full- and part-time jobs, and $3.9 million in labor income.

The Penobscot Energy Recovery Company (PERC), located in Orrington (Penobscot County), generates $40.0 million in annual revenue, and it directly employs 75 workers that receive $6.5 million in labor income. PERC has a county-level annual economic contribution, accounting for multiplier effects, of an estimated $52.9 million in revenue, 188 full- and part-time jobs, and $10.8 million in labor income.

Penobscot Energy Recovery Company
Orrington, Maine

The total annual revenue, including multiplier effects, associated with the regional economic impacts of the four waste-to-energy facilities ranges from a low of $10.5 million (MMWAC) to a high of $52.9 million (PERC). Overall, the combined regional economic contribution of the four facilities –on their respective counties –is $129.6 million in revenue, 549 full- and part-time jobs, and $31.6 million in labor income. These combined regional economic impacts are less than the waste-to-energy sector's statewide economic contribution

(Table 2) because the state-level analysis captures the economic activity occurring in the four counties where facilities are located as well as the rest of Maine, where the industry impacts the economy through the purchases made by businesses and workers related to the waste-to-energy sector.

Although the county-level waste-to-energy industry employment multipliers exceed 2.0 for all of the facilities, these estimated figures –as well as the revenue and labor income multipliers – differ somewhat across regions of the state. In the case of the employment multipliers, the variation across counties is explained by differences in the productivity of workers across the four facilities, as well as differences in the size of the economies in the counties where the waste-to-energy facilities are located. As noted above, the amount of revenue per worker (i.e., a worker's productivity) and the amount and variety of goods and services available locally –which increases the extent to which businesses and workers can make purchases in the region –tend to increase the size of a facility's county-level employment multiplier.

SUMMARY

The Maine waste-to-energy industry is made up of four facilities, located in Auburn, Biddeford, Orrington and Portland. These plants directly support a combined 228 jobs, which provide $19.5 million in labor income (an average of $85,691 per worker). An economic impact analysis shows that, including multiplier effects, the Maine waste-to-energy sector has a total statewide economic contribution of an estimated $137.0 million in revenue, 597 full- and part-time jobs, and $33.9 million in labor income (an average of $56,713 per worker). The impacts of the waste-to-energy facilities extend across all industries of the Maine economy, through the spending of businesses and workers related to the sector. Based on revenue figures, the industries that are most heavily impacted by the spending of businesses and workers related to the waste-to-energy facilities include Finance and Insurance (due to the spending of businesses and workers); Healthcare and Social Assistance (mainly due to the spending of workers); and Professional, Scientific, and Technical Services (mainly due to the spending of businesses). The impacts of the waste-to-energy sector extend across all regions of Maine, with the largest impacts felt in the four counties where facilities are located.

STATEWIDE ECONOMIC CONTRIBUTION OF MAINE'S WASTE-TO-ENERGY SECTOR

This study was conducted under a private consulting contract with the Maine Waste-to-Energy Working Group.

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