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STATE OF MAINE  
112TH LEGISLATURE  
SECOND REGULAR SESSION

ELECTRIC POWER  
TRANSMISSION & PURCHASES  
Report of a Study by the  
JOINT STANDING COMMITTEE ON  
UTILITIES  
112th Maine Legislature

December 2, 1986

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REPORT OF THE STUDY ON  
ELECTRIC POWER TRANSMISSION & PURCHASES

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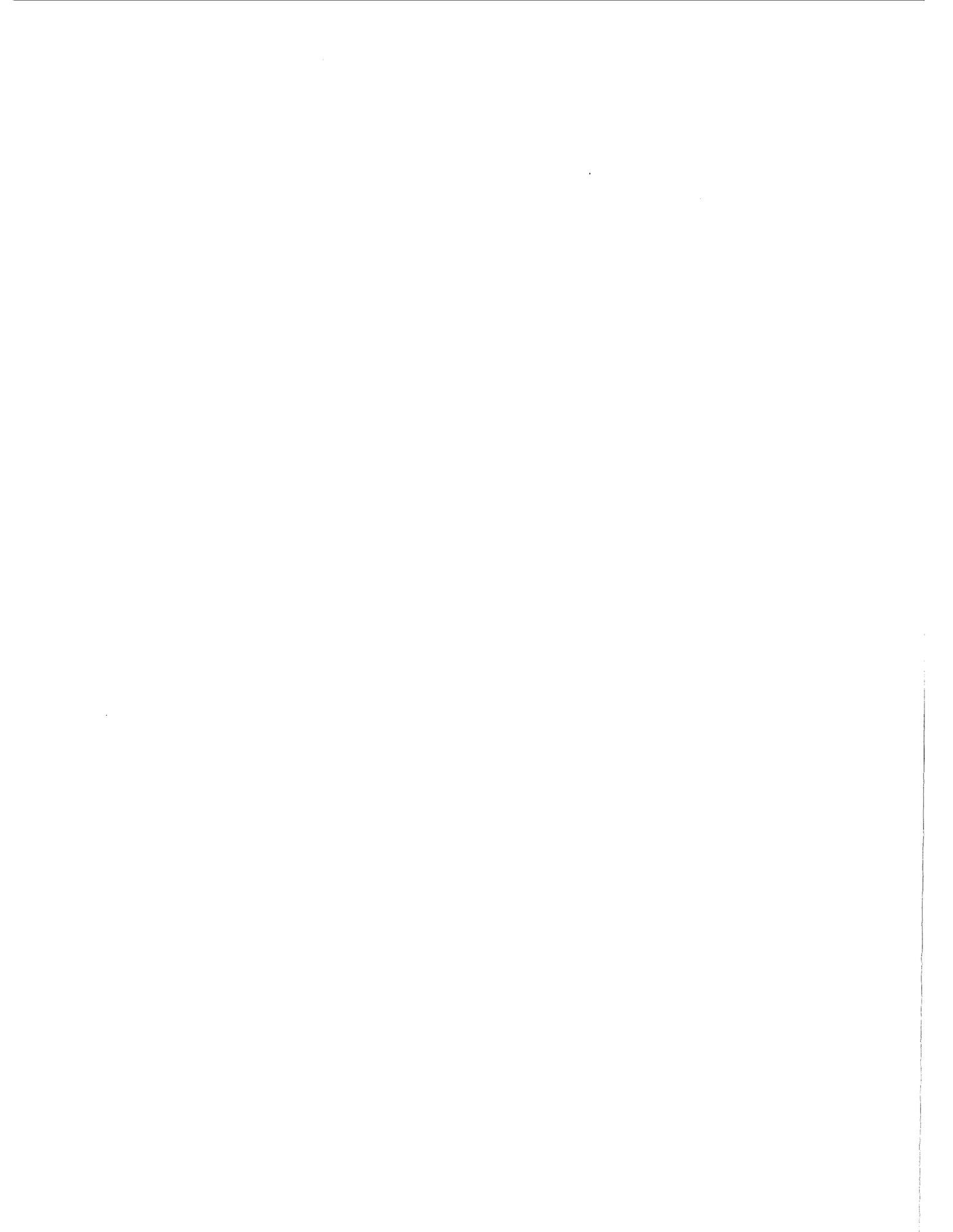
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## CHAPTER I

### INTRODUCTION

The Joint Standing Committee on Utilities was directed by Chapter 740 of the Public Laws, enacted in 1986, to study the issues of wheeling and electric power purchases. Wheeling is transmission of power over the lines of a utility which does not own that power. The study was also to address the issues of purchase of foreign power, direct purchase of power by end-users, and competition and deregulation of electric utilities. To conduct the study, the Joint Standing Committee established the following Subcommittee:

Rep. Herbert E. Clark, Chair  
Rep. Alexander Richard  
Rep. Norman E. Weymouth  
Rep. Mary C. Webster, Alternate

The Legislature had considered a bill expanding authorization for wheeling in many respects, as well placing conditions on imports of Canadian power. The bill which was finally enacted expanded authorization for wheeling between affiliated industrial enterprises and from any generator to a distant utility. The other aspects of wheeling and Canadian imports were included in this study.

To provide a basis for the study, the Public Utilities Commission (PUC) was directed to prepare a factual report, with the assistance of the Office of Energy Resources and the Public Advocate. The Commission met with the Subcommittee to plan the preparation of that report. Later, the Subcommittee joined the PUC staff to hear the comments of the interested parties at an informal round table discussion scheduled before preparation of the draft PUC report. Finally, the Subcommittee staff had opportunity, along with others, to comment on the draft before the final PUC report was published. The PUC developed a list of 79 interested parties, who were kept informed and participated if they wished by commenting at various stages of the report. The PUC submitted its report as a staff report, and cautioned that the initial conclusions of the staff did not indicate a decision of the Commission with respect to issues which may arise in the future. The PUC also provided the Legislative staff with a set of copies of all responses to information requests and all comments submitted by interested parties. PUC submitted their report to the Committee on November 3, 1986. A copy of the Executive Summary is reproduced in Appendix G.

The Subcommittee met twice to discuss the PUC report and to develop the findings and recommendations included here. In addition, the Subcommittee sent certain follow-up questions to the Commission. These, together with the PUC's replies, are reproduced in Appendix H.

The Full Committee met on November 12th and approved the recommendations of the Subcommittee, including the proposed legislation.

This report presents the major issues that were identified, together with some of the policy options that were discussed and the recommendations of the study. The report continues with a general survey of various aspects of electric generation and transmission, prepared by the Subcommittee staff but based primarily on the work of the PUC and the testimony and comments of various interested persons. These are supported by detailed appendices. Finally, the report includes proposed legislation to implement the recommendations, including further monitoring of the progress of wheeling, analysis of related issues, and specific provisions to remedy a few shortcomings in the present law.

In this report, several electrical units are used frequently. Gigawatt-hours refers to electric energy generated or used over a period of time. It is similar to the kilowatt-hours that appear on residential electric bills. Megawatts refers to electric power, which is the rate of generation or use of electric energy per second. It is similar to the watts that appear on the ratings of electric light bulbs. These quantities are measured in metric units. One Kilowatt equals 1000 watts; one Megawatt equals 1,000,000 watts; one Gigawatt equals 1,000,000,000 watts. The other electrical unit used is the Kilovolt, which is used in describing transmission lines. A Kilovolt is 1000 volts. Familiar household wiring is 110 volts. A transmission line with a higher voltage rating is capable of carrying more power.

CHAPTER II

ISSUES & RECOMMENDATIONS

The leading issues discussed in the Committee study are summarized below, together with the recommendations.

**A. ISSUE: Wheeling from Utility to Utility**

Hundreds of Megawatts of wheeling from utility to utility occurs now, based on voluntary agreements. The rates are approved by the Federal Energy Regulatory Commission (FERC). The PUC may order such wheeling under the new law (35 MRSA §2330(3)), but there have been no requests so far.

Question: Should PUC be authorized to prohibit by statute wheeling from utility to utility if it is not in the public interest?

Recommendation: This study did not recommend this action because no situation has arisen which shows a need for such authority, it could constitute an unconstitutional burden on interstate commerce, and the PUC can already discourage unreasonable wheeling through its general jurisdiction in rate cases or investigations of "unreasonable" acts.

**B. ISSUE: Wheeling from Small Power Producer to Outside Utility**

Tens of Megawatts of wheeling from small power producers to outside utilities occurs now, based on voluntary agreements. The rates are approved by FERC. The PUC may order such wheeling under the new law (35 MRSA §2330(3)), but there have been no requests so far. A request by Down East Peat for wheeling by CMP that was pending when the legislation was being considered last spring has been negotiated voluntarily.

Question: Should PUC be authorized to prohibit wheeling to an outside utility if it is not in the public interest?

Recommendation: This study did not recommend this action for the same reasons stated above.

**C. ISSUE: Wheeling from outside utility to End User**

Wheeling directly to end-users would be inconsistent with the present regulatory scheme which grants monopoly service areas to utilities and places on them an obligation to serve. Some large users including the U.S. General Services Administration and Airco Company (AIRCO) are interested in contracting for power and wheeling it in to save money. The PUC authority is somewhat unclear, although their staff report concludes that approval of such agreements is required under the general powers of 35 MRSA §2301. Several options were discussed for more statutory guidance on end-user wheeling.

Questions: Should there be a specific prohibition of end-user wheeling in the statute? Should PUC be authorized to permit wheeling to end-users, but only under specified conditions? Should Maine industrial customers be granted direct access to power from any major new transmission line from Canada?

Recommendation: This study recommends that the law be left unchanged for now. This is an emerging issue which should be monitored, but there does not appear to be a need for legislation at this time.

**D. ISSUE: Wheeling between Non-Utilities**

Direct transmission of electricity between non-utilities has been authorized for a number of years between Qualifying Facilities and their associates through their private property. Wheeling is authorized between affiliated industrial enterprises over utility lines, in accordance with the new law (35 MRSA §2330(1)). Wheeling between non-utilities is not specifically provided for in the law except in these two special cases. It is unclear how much of either is happening now. No one has requested authority from PUC.

Question: Should the authorization to allow wheeling between non-utilities be widened, narrowed, or left unchanged?

Recommendation: This study discussed these possibilities and decided to leave the authorization for wheeling between non-utilities unchanged for now.

Question: Should the State require filing of wheeling agreements with PUC?

Recommendation: This study recommends such filing in order that PUC may be well informed on the progress of wheeling, and so that others may be able to obtain necessary information for planning purposes.

Question: Present law does not contain definitions for wheeling purposes of "affiliated interest" or of "industrial enterprise". Should definitions be added?

Recommendation: This study recommends that "affiliated interest" be defined in the statute as referring to entities where one has the controlling interest in the other. It does not recommend adding a definition of "industrial enterprise" because the words themselves seem sufficiently clear for regulatory purposes, and there is a danger that a new definition might unintentionally change the intent of the original statute.

E. ISSUE: Construction of a major transmission line bringing power from Canada through Maine.

One major transmission line from Maine to Canada to southern Maine already exists , the Maine Electric Power Company (MEPCO) line, which brings in 700 Megawatts (MW)\* from New Brunswick to Wiscasset. Other major lines from New Brunswick or Quebec are under discussion.

Question: Should the statute require that Maine utilities be provided access to power from any international transmission line through the State?

Recommendation: This study decided that a statutory requirement for access to power would be unnecessary because PUC must approve construction of the line under 35 MRS-A, and no doubt would attach appropriate drop-off conditions.

F. ISSUE: Importation of Canadian power.

As shown below, Maine utilities import a substantial amount of their power at costs below the alternatives. Central Maine Power (CMP) and Maine Public Service (MPS) believe their optimum reliance on New Brunswick for firm capacity is 20-30%, while Bangor Hydroelectric (BHE) suggests 20%. Others, including the small power producers, believe imports should be limited to allow more in-State power production and increase Maine jobs and tax revenues. The following table summarizes the situation for the period beginning January, 1986.

IMPORTATION OF CANADIAN POWER, 1986

Utility	Capacity	Energy	Period
CMP	9%	18%	6 mo.
BHE	10%	18%	8 mo.
MPS	-	24%	8 mo.

Question: Should there be a limit on the percentage of the electric power imported for the State, or for any utility?

Recommendation: The study does not recommend a limit on imported power at this time, but does recommend that, in connection with any application to build a major new international transmission line, the PUC consider the comparative economic impact on the state of production within Maine from renewable resources and of the purchase of the power from outside the state.

At present, 225 MW on the MEPCO and CMP lines is contracted for wheeling power from New Brunswick to Massachusetts.

Questions: Would that transmission capacity better be used for power generated in Maine? Should there be any restriction on import for export to another state?

Recommendation: The study recommends monitoring of this situation. There does not seem to be a saturation problem, keeping Maine producers off transmission lines at this time. The legal problems of interstate commerce would require careful evaluation if any restriction were desired.

#### G. ISSUE: Bottlenecks

There are interstate bottlenecks in New Hampshire that can prevent power from Maine reaching Southern New England. When Seabrook goes on line these may become worse.

Question: Should action be taken to relieve the bottlenecks?

Recommendation: The study found no effective action readily available to the Legislature. It did note that private efforts through the New England Governor's Conference and NEPOOL may produce some results.

#### H. ISSUE: Competition & Deregulation

Cogeneration, small power production, and imported power have already brought competition to the electric generation industry. There has always been competition with other fuels for end use, but now the idea of direct competition for end use has been proposed. In fact, it is authorized by the new Maine law for the special case of affiliated interests. Meanwhile the transmission system remains a natural monopoly. It would not make economic sense to have two of them.

Question: Should end-use competition be discouraged or encouraged? What would that mean to the remaining customers? to the utility? Should utilities be assisted in using their transmission monopoly to become brokers of power between generators in Maine and Canada and end-users in Southern New England?

Recommendation: The study identified these as important questions but makes no recommendations at this time except that the issues surrounding competition do merit further monitoring by the PUC.

CHAPTER III

REVIEW OF 1986 WHEELING LEGISLATION

A. Legislation Considered

In 1986, the Legislature considered LD 2104, AN ACT to Permit Industrial Electric Consumers to Purchase Energy from and Through Transmission Lines Carrying Energy from Canada Through the State, with the following provisions:

1.The bill would have established a requirement for wheeling between affiliated industrial enterprises upon request and subject to reasonable conditions to protect the utility and its customers.

2.Under existing law "qualifying facilities", i.e. small power producers and cogenerators, could use their power themselves or sell it to their local utility. The bill would have required utilities to provide transmission ("wheeling") of that power to industrial customers within the state subject to reasonable conditions. Those conditions would have to ensure that the wheeling would not place an undue burden on the utility.

3.Under existing law construction of a major transmission line (100 kilovolts or more) requires a certificate of public convenience and necessity. The bill would have required additional findings if the new transmission line is from Canada: (1) that need exists; (2) that Maine utilities have a reasonable chance to purchase energy or capacity; (3) that Maine utilities have adequate opportunity to profit from construction or ownership and (4) that Maine industrial customers would have a reasonable chance to purchase energy or capacity. PUC would have had to ensure that direct industrial purchases were not likely to result in loss by the customers of the electric utility most recently serving that industrial customer.

B. Legislation Enacted

The Legislature finally enacted Public Laws, Chapter 740 (LD 2327) in which:

1. The provision for wheeling between affiliated industrial enterprises subject to reasonable conditions was included. The wheeling agreement must be unlikely to result in an uncompensated loss by or place an undue burden on the wheeling utility or its customers, and the agreement must not unreasonably impair the ability of the wheeling utility to serve its customers. In addition, if an industrial customer leaves a utility in favor of wheeled power, the utility is relieved of the obligation to supply that amount of power to the customer.
2. A requirement to wheel from any supplier of electricity to any utility subject to reasonable conditions was added.
3. The section on wheeling from "qualifying facilities" to unaffiliated industrial consumers was deleted, but the issue was included in this study.
4. The section on transmission lines from Canada was deleted, but the issue was included in this study.
5. The effects of purchases of out-of-state power was added for inclusion in this study.
6. The question of the relationship among wheeling, competition and deregulation of electric utilities was added for inclusion in this study.

## CHAPTER IV

### MAINE'S ELECTRIC POWER PICTURE

#### A. Overview

There are three major utilities that produce, import and export power in the state of Maine: Central Maine Power (CMP), Bangor Hydro Electric (BHE), and Maine Public Service (MPS). Their energy purchases and capacity for the first part of 1986 are listed in Table 1. These purchases and plants fulfill most of Maine's demand for electricity.

Maine utilities experience a winter peak - peak demand for the three major utilities in January 1986 was:

CMP	1453.4 MW
BHE	254.5 MW
MPS	<u>124.5 MW</u>
TOTAL	1832.4 MW

To meet this peak demand and maintain a 20% reserve margin, the three largest Maine utilities need approximately 2291 MW of capacity. Generation in the state exceeds that figure by about 150 MW, although part of that generation is owned out-of-state.

There are two major generating facilities in Maine. Maine Yankee, an 850 MW nuclear power plant in Wiscasset, and Wyman #4, a 619 MW oil-fired plant in Yarmouth. However, 50% of the capacity of Maine Yankee and 29% of Wyman #4 is owned by out of state utilities, as shown in Figure 1. Small power producers expected to come on line in Maine by 1989 will increase electric generation capacity by approximately 250 MW as shown in Appendix H. Looking at the major electric utilities individually illustrates the context for major power imports, exports and wheeling.

Table 1 shows the electric power picture for each of the major utilities in early 1986. Figure 2 shows the information in graphic form. Energy refers to energy actually produced or purchased. It is measured in Megawatt-hours (MWH) or Gigawatt-hours (GWH). One GWH is 1000 MWH. Capacity refers to the ability to produce energy, whether it is used or not. Capacity is measured in Megawatts. 1000 MW capacity can theoretically produce 8760 GWH of energy per year. In reality a plant produces less because it only runs part of the time.

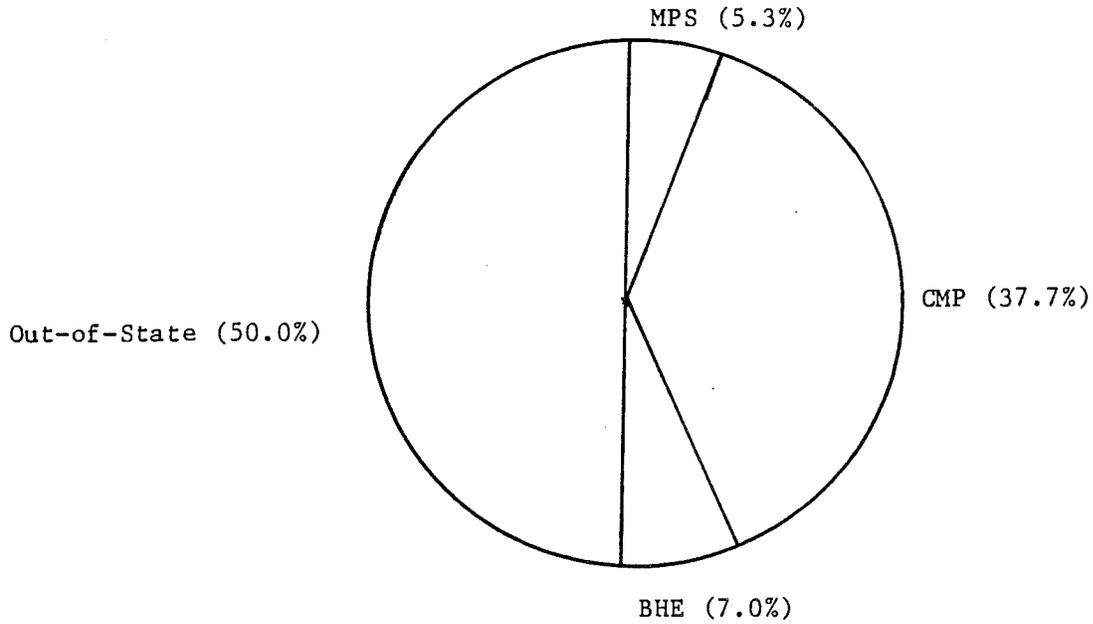
#### B. Central Maine Power (CMP)

Central Maine Power supplies about 9000 GWH per year and generates a large proportion of its own power. However, CMP does make substantial purchases of power from Canada and from other sources, depending on which source is the most economical. In the first half of 1986, CMP obtained 66% of their power from the ownership of Maine Yankee, Wyman #1, 2, 3 and 4, and their hydroelectric plants. They purchased 12.5% from cogeneration and small power production facilities.

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FIGURE 1  
OWNERSHIP OF MAJOR POWER PLANTS

Maine Yankee  
850 MW



Wyman #4  
619 MW

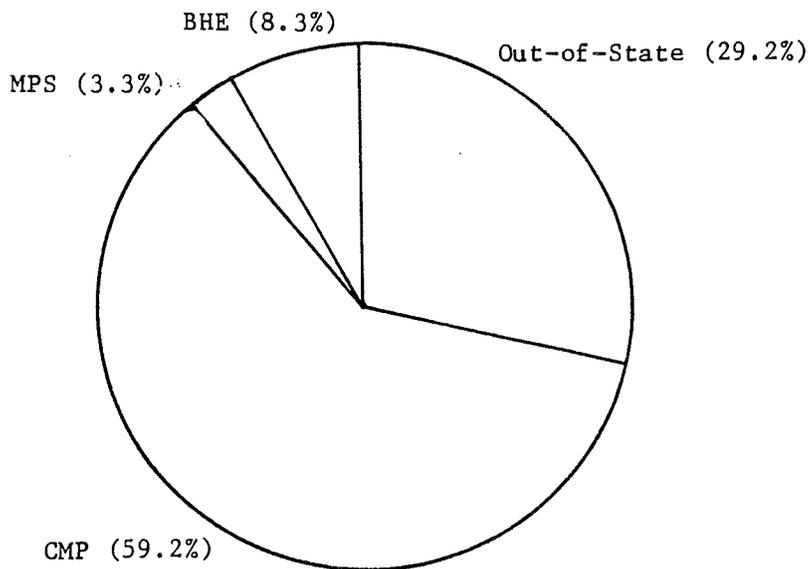


TABLE 1. POWER SOURCES, MAINE UTILITIES

Energy

	<u>CMP</u>		<u>BHE</u>		<u>MPS</u>	
	<u>1-1-86-6-30-86</u>		<u>1-1-86-9-1-86</u>		<u>1-1-86-9-1-86</u>	
<u>Owned in-state</u>	<u>Gigawatt-hrs %</u>		<u>GWH %</u>		<u>GWH %</u>	
<u>Generation</u>						
Maine Yankee	1120.7	25.5	263.2	26	203.5	43
Wyman 4	475.2	11	102.8	10	41.2	9
Hydro	900.5	20.5	146.6	14	104.0(4)	22
Other Fossil	383.1(1)	9	41.2	4	-	
<u>Other in-state</u>						
SPPF(2)	162.6	3.5	72.5 est.	7	7.7	2
Cogeneration	384.7	9	-			
Other Utilities	(3)					
<u>Import-New Engl.</u>						
Owned Nuclear	144.8	3	-		-	
Net NEPOOL	9.0		28.8	3	-	
Other Purchases	(3)		173.3	17		
<u>Import-New Bruns.</u>						
NBEPCC	787.2	18	187.5	18	112.0	24
<u>Other</u>						
Other Purchases	22.0	.5	-		-	
Net	4389.7	GWH	1015.9	GWH	468.4	GWH
Annual (est.)	9000	GWH	1500	GWH	700	GWH

Capacity

	<u>Megawatts %</u>		<u>MW %</u>		<u>MW %</u>	
	<u>Owned in-state</u>					
<u>Generation</u>						
Maine Yankee	320.0	18	59.0	20	45.0	26
Wyman 4	366.3	20	51.6	18	20.7	14
Hydro	305.0	18	34.5	12	36.3(4)	23
Other Fossil	352.6(1)	21	39.0	13	35.3	23
<u>Other in-state</u>						
SPPF	97.0	6	15.0	5	22.0 est.	14
Cogeneration	-		-		-	
Other Utilities	-		-		-	
<u>Import New Engl.</u>						
Owned Nuclear	83.0	5	-		-	
Other Purchases	-		65.0(5)	22	-	
<u>Import New Bruns.</u>						
NBEPCC	150.0	9	30.0	10		
<u>Other</u>						
Other Purchases	46.0(6)	3	-		-	
Total	1719.9	MW	294.5	MW	159.3	MW

Sources: PUC 11-86, BHE 11-86, CMP 11-86, MPS 11-86.

(1) Includes Wyman 1-3.

(2) Includes SPPF and Cogeneration for BHE and MPS.

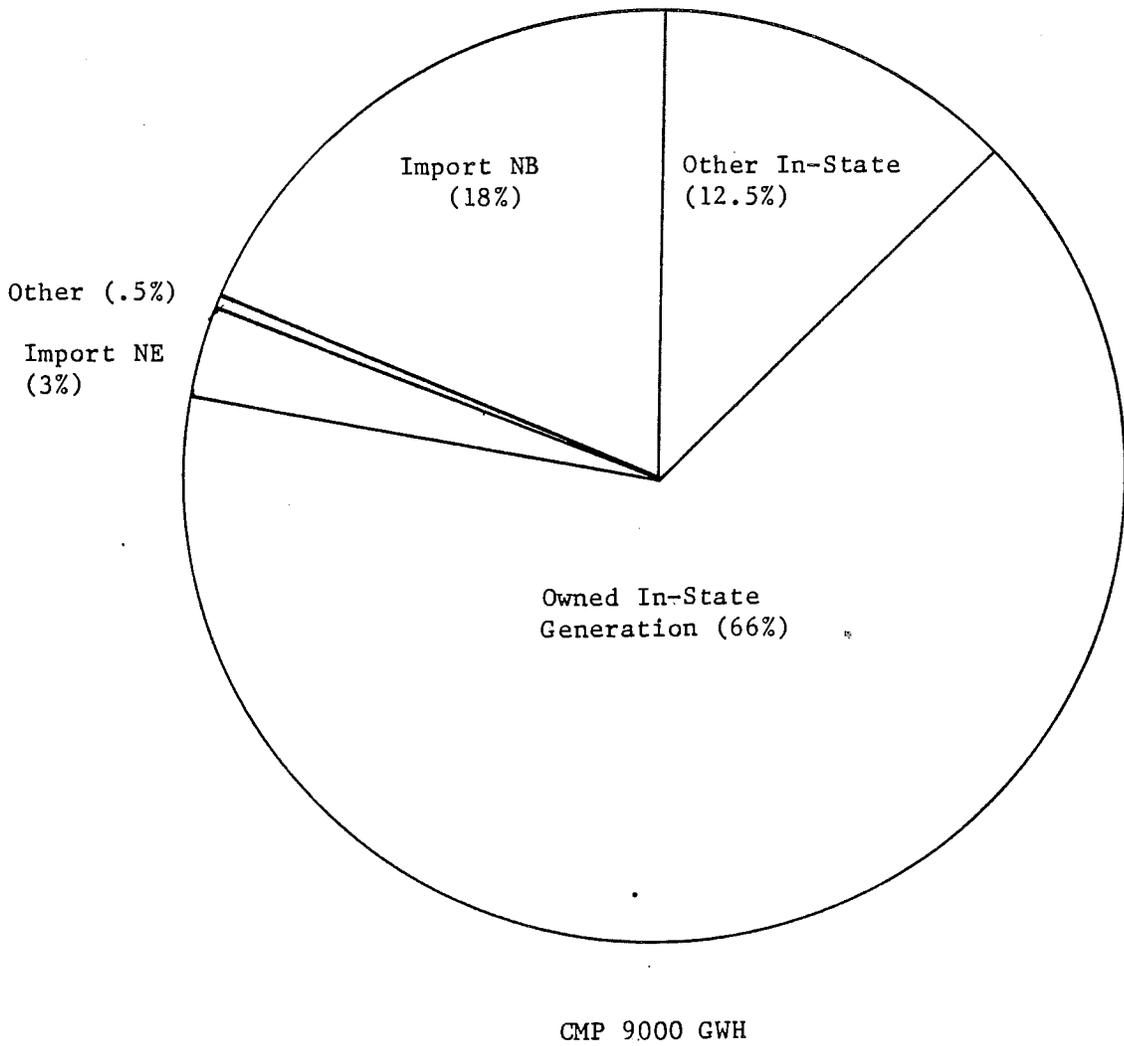
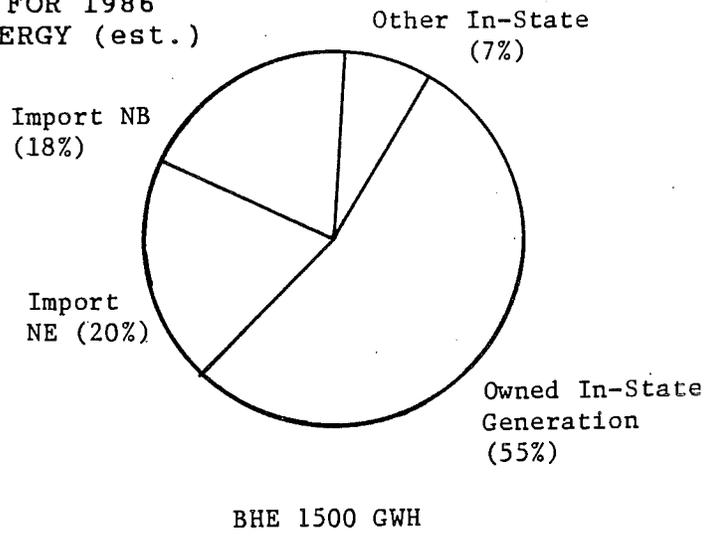
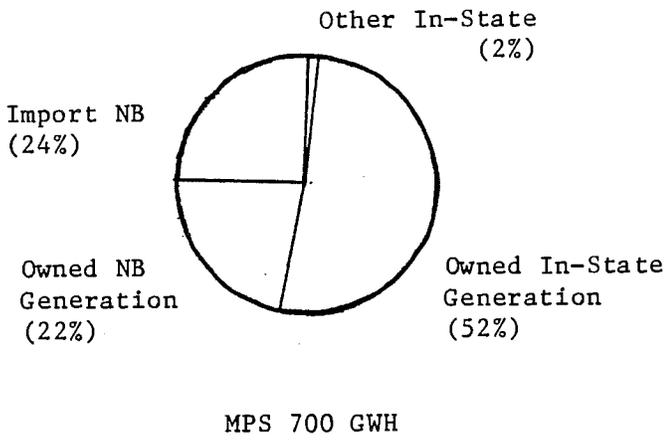
(3) Total included in "Other."

(4) 34 MW - Tinker Dam, owned by MPS but located in New Brunswick.

(5) Boston Edison, New England Power, and Northeast Utilities.

(6) Probably major cogeneration.

FIGURE 2  
 POWER SOURCES FOR 1986  
 ANNUAL TOTAL ENERGY (est.)



purchased 18% of their power from the New Brunswick Electric Power Commission (NBEPCC) via the MEPCO line, a line which also provides access to power from BHE. CMP wheeled in 3% of their power from ownership shares in power plants in the other New England States. CMP also belongs to NEPOOL, a consortium of most of the electric utilities in New England, that dispatches power throughout the region on a least cost basis. During the first half of 1986 CMP purchased and wheeled in a net amount of less than 1% from NEPOOL.

#### C. Bangor Hydroelectric (BHE)

Bangor Hydroelectric supplies about 1500 GWH per year. BHE have a number of small- to medium-sized facilities in their service area, but also own substantial portions of Maine Yankee and Wyman #4. In the first part of 1986, BHE obtained 55% of their power from their ownership of Maine Yankee, Wyman #4 and their hydroelectric and fossil-fueled plants. Power from Maine Yankee and Wyman #4 is wheeled in over the CMP and MEPCO lines. BHE purchased 7% from cogeneration and small power production facilities. Of this, they wheel a portion via CMP and PSNH to a group of utilities in New Hampshire.

BHE purchased 18% of their power from New Brunswick Electric Power Commission and wheeled it in via MEPCO. They purchased and wheeled in a net 3% from NEPOOL, and 17% was wheeled in from Boston Edison, New England Power and Northeast Utilities.

#### D. Maine Public Service (MPS)

Maine Public Service supplies about 700 GWH per year. MPS produce very little of their own power in this service territory. They own Tinker Dam in New Brunswick and significant shares of Maine Yankee and Wyman #4. In the first part of 1986, MPS obtained 52% of their power from their ownership of Maine Yankee and Wyman #4 and wheeled it in over the CMP, MEPCO and New Brunswick lines. MPS purchased 2% from small power production facilities.

MPS obtained 22% of their power from Tinker Dam and wheeled it in over NBEPCC lines. They also purchased and imported 24% of their power from New Brunswick Electric Power Commission. MPS is not a member of NEPOOL.

#### E. Consumer-Owned Utilities

There are eleven consumer-owned utilities which buy power at wholesale from their local major utility. Among these, Eastern Maine Electric Cooperative (EMEC) and Kennebunk Light & Power have small amounts of generating capacity of their own. One other consumer-owned utility, Matinicus Electric Co., generates all its own power. Another, Isle Au Haut Electric Co., buys all power from Stonington & Deer Isle Power Co.

CHAPTER V

TECHNICAL ANALYSIS OF TRANSMISSION AND WHEELING

In New England, private electric utilities have had integrated electrical transmission systems since the late 1960s prompted by large plants, joint ownership of generating capacity, public concern over high rates, and the 1965 northeastern blackout. New England utilities are interconnected by 345 kV lines.

A. Interconnections

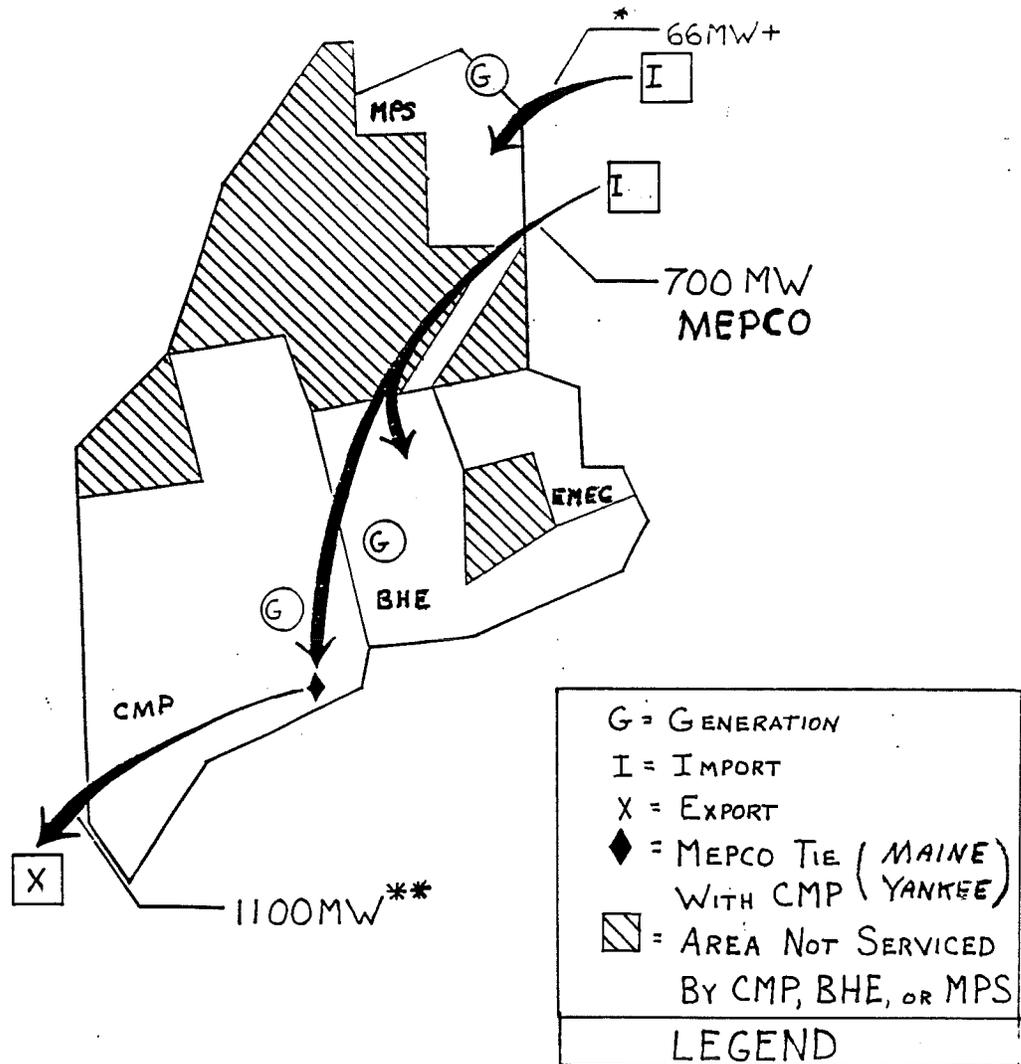
Table 2 and Figure 3 illustrate and describe the major utility interconnections in Maine. Maine connects with the rest of New England over CMP's two 345 Kilovolt (kV) lines from Lebanon, Maine to Rochester, New Hampshire. Another 345 kV line, the MEPCO line, connects Maine with New Brunswick. MPS connects with New Brunswick through a 138 kV line. The northeast portion of the transmission grid extends throughout New England and New York state and connects to Ontario, Hydro-Quebec, Pennsylvania, New Jersey, and Maryland.

TABLE 2  
MAJOR MAINE UTILITY INTERCONNECTIONS\*

<u>Utility</u>	<u>Connects with</u>	<u>Location</u>	<u>Transfer Capability</u>
CMP	BHE	Bucksport	275MW
	MEPCO	Maine Yankee	700MW
	Public Service of NH	Rochester, NH	850-1100MW
BHE	CMP	Bucksport	275MW
	MEPCO	Orrington	368MW
MPS	New Brunswick	Presque Isle	about 100MW

\*Note: BHE also has ties with five consumer-owned systems: Stonington-Deer Isle, Lubec Water & Electric, Eastern Maine Electric Coop., Union River Electric Coop., Swans Island Coop. MPS supplies power to Houlton Municipal, Van Buren Light & Power District, and Eastern Maine Electrical Coop. CMP supplies power to Kennebunk Light & Power, Carrabassett Light & Power, Fox Islands Coop, and Madison Electric.

FIGURE 3  
POWER FLOW IN MAINE



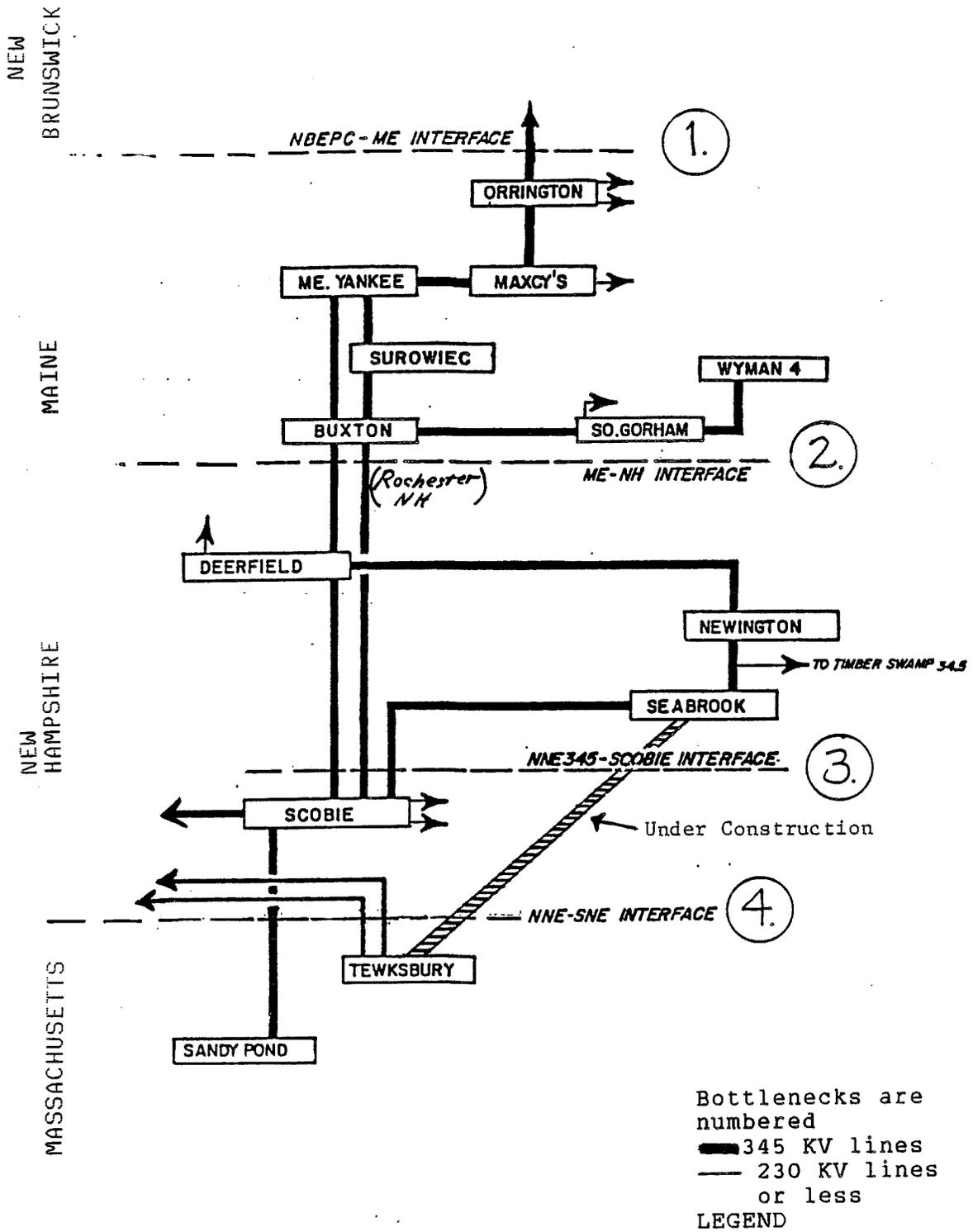
NOTES:

\* 66MW+ equals electricity wheeled from southern Maine through New Brunswick, plus energy purchased on an economy basis from New Brunswick.

\*\* 1100MW is the normal capacity of these lines, but they have the capacity to carry 1400 MW in special circumstances.

The arrows show the usual direction of power flow, but at times power flows in the opposite direction.

FIGURE 4  
TRANSMISSION SYSTEM DIAGRAM



MASSACHUSETTS

## B. Bottlenecks

Electric power transmission in New England has to meet strict reliability standards by remaining stable during three phase faults (short circuits) and generation, transformer or transmission circuit loss. Line and equipment loadings as well as voltages must stay within their rated range most of the time. Bottlenecks occur when the transmission system cannot transfer all the power demanded and still comply with these reliability standards. New England has 4 bottlenecks which affect Maine in the current transmission system (see Figure 4):

### 1. New Brunswick-Maine (MEPCO line)

The MEPCO line carries most of the power between New Brunswick and Maine and is currently able to carry 700MW. Adjusting for MPS entitlement to wheeling northward of their 66 MW share of Maine Yankee and Wyman #4 gives an effective southward capacity of 766 MW. There are firm power contracts for 435-485 MW, and 200 MW of the line is used by CMP for spot energy purchases from New Brunswick, leaving 81 MW of capacity for other purchases, as shown in Table 3. New Brunswick would like to sell additional power from several proposed plants but cannot contract to transmit enough power south. This bottleneck also affects wheeling from Aroostook County which must pass through New Brunswick.

Both NEPOOL and the Maine utilities have done preliminary studies on a second transmission line to alleviate this bottleneck. The Maine utilities are not currently pursuing this line until studies of a potential tie with Hydro Quebec have been completed. NEPOOL would require additional capacity at the Maine-New Hampshire interface and the Northern New England-Southern New England interface to be able to use this additional power.

### 2. Maine-New Hampshire Interface

Two 345 kV lines owned by CMP connect Maine to New Hampshire between Buxton ME and Rochester NH, and these two lines are currently operated at or near full capacity most of the time. They typically carry between 850 MW and 1100 MW southbound although they can carry a maximum of 1400 MW when a special bypass scheme is activated. This is a major constraint to wheeling power out of the State. These two lines continue on to the NNE-Scobie interface.

TABLE 3  
WHEELING VIA THE MEPCO LINE

<u>Available Power</u>		<u>Present Use</u>	
Net line capacity	700 MW	Contract NBEPc to CMP	150*
Adjustment for MPS share of		Contract NBEPc to BHE	30
Maine Yankee	45	Contract Fairfield Energy to CMP (on-line 1987)	30
Wyman #4	<u>21</u>	Contract, NBEPc to Utilities in Mass.	225
Effective Capacity	766 MW	spot purchases by CMP	200
		available for other purchases	<u>81</u>
		Total	766MW

\*contract equals 150MW, but they sometimes add another 50MW.

MEPCO Ownership:

CMP	78.14%
BHE	14.19%
MPS	7.49%
Woodland W&E	<u>.18%</u>
	100%

Source: PUC 1986

### 3. Northern New England - Scobie Interface

As shown in Fig 4, the lines from Maine continue to the NNE-Scobie interface, via Deerfield, NH. An existing transmission loop connects Newington and Seabrook, NH to the NEPOOL grid at both Deerfield and Scobie, NH. Scobie must handle power flowing from all these sources plus other New Hampshire sources. This can be a bottleneck. Without additional transmission capacity, once Seabrook is operating and added to the grid, the power transmitted from Maine south would have to be reduced by the amount of Seabrook production. As much as 860MW might be "locked in," unable to get from Maine to southern New England because the line will be at capacity.

However, a new line from Seabrook to Tewksbury, Massachusetts is under construction. This line will carry 500 to 950 MW under normal conditions, and bypass the Scobie interface. Completion is expected in late 1987. Nevertheless, if Seabrook does come into operation, at best Maine's transfer capability south will not be substantially improved by the addition of the new line.

### 4. Northern New England-Southern New England Interface

This interface is considered a bottleneck only because the Scobie-Sandy Pond line is crucial to north-south transfers and is therefore vulnerable. If this line fails, NEPOOL has developed a special protective relay scheme to stop excess power from reaching this interface. A line from Scobie to Tewksbury to alleviate this bottleneck has been discussed by NEPOOL, but there are no present plans for construction.

## C. Existing Wheeling Contracts

Table 4 outlines Maine utilities' existing contracts to wheel power. In addition to these contracts, NEPOOL requires CMP and BHE to wheel electricity for NEPOOL members.

TABLE 4  
EXISTING UTILITY CONTRACTS TO WHEEL POWER

<u>Producer</u>	<u>Wheeling Utilities</u>	<u>Amount</u>	<u>End-User</u>
1. New Brunswick Electric Power Com. (including Pt. Lepreau)	NBEPCC	66MW (variable)	MPS
	MEPCO	30MW	BHE
	MEPCO	150MW	CMP
	MEPCO, CMP	225MW	Mass. Municipal Wholesale El. Coop. Boston Edison, Commonwealth Electric
2. Maine Yankee	MEPCO	45MW	MPS
	MEPCO	59MW	BHE
	CMP, PSNH	425MW	Owners out of state
3. Wyman 4	CMP, MEPCO	21MW	MPS
	CMP, MEPCO	52MW	BHE
	CMP	180MW	Owners out of state
4. BHE capacity and energy	BHE	variable	CMP
5. Peat Products	BHE, CMP	23MW	Mass. Municipal Wholesale El. Coop. Boston Edison
6. BHE system power and purchases from four QF's	CMP PSNH	25MW	Until, a group of NH utilities
7. Fairfield Energy Venture	MPS NBEPCC	30MW	CMP (on-line 1987)
8. NEPOOL	PSNH, CMP	variable	BHE
	PSNH	variable	CMP
9. Boston Edison, Northeast Utilities, & New England Electric	CMP, PSNH	65MW	BHE (expired 10/31/86)

D. Reliability

Chapter 32 of the Maine Public Utility Commission's rules sets criteria for meeting reliability standards. Utilities commonly use four criteria:

1. Capacity - no facility should be overloaded except in emergency situations.
2. Voltage - transmission system voltages should be maintained at 95 to 105% of their operating base voltages under normal system conditions.
3. Loss of load - while this varies from utility to utility, BHE uses loss of loads less than 50MW. If greater than 25MW, re-supply should occur within 2 hours and if below 25MW, re-supply should occur within 24 hours.
4. Maintenance - routine maintenance should not allow voltage and capacity limits to be exceeded.

E. Planned Transmission Additions

Bottlenecks, the need to maintain reliability, and the desire for a better integrated transmission system are forcing utilities to plan for, upgrade and add to their current transmission system. Major upgrades include:

1. As mentioned above, a new tie to New Brunswick to transfer more power into Maine is currently under study by NEPOOL and Maine utilities.
2. A DC line of up to 1,000 MW rating, connecting with Hydro-Quebec in western Maine is currently being negotiated by CMP. Part of this power would remain in Maine.
3. A smaller line in the Caribou area is under construction by MPS to supply more power to the area.

In several instances, small power producers have been sited to minimize the need for system upgrades. BHE may be able to postpone several transmission upgrades because of the favorable impact of these units which generate power near the load where it is used. For example, a proposed upgrade of the Bangor to Ellsworth lines has been postponed because of the installation of local qualifying facilities.

F. Power Transmission

Power is transmitted in the U.S. predominantly over alternating current (AC) lines except when power is transmitted over long distances or where a direct current (DC) tie is needed to isolate two AC systems. AC facilities allow an easier transition between different voltages, lower cost line terminal facilities and the ability to isolate faulted segments on a line. In contrast, DC lines offer lower line losses in transmission although AC to DC converter stations are very expensive. Hydro-Quebec interconnections are unique in New England in that they are DC ties.

The cost of new transmission lines depends on the voltage it is designed to carry although this is not proportional. These costs are discussed in the PUC's report. In New England, a 345 kV AC line is the most cost-effective.

CHAPTER VI

AN ANALYSIS OF THE ECONOMIC IMPLICATIONS OF WHEELING

The 1980s have been a period of transition for electric utilities. Increased reliance on purchased power rather than construction of new generating stations has become dominant. Power sales and purchases by Maine utilities have highlighted the importance of transmission capability. Utility rates for electricity will rise and remain relatively high for the next several years, a result of nuclear plant investments and long-term contracts with small power producers. Competition will play an increasingly important role in utility operations.

A. Wheeling Scenarios

Wheeling proposals can improve the overall efficiency of the utility system, shift costs from one group of utility customers to another, or both. To analyze what effects a specific proposal may have, one must look at whether physical changes in power transmission and generation will occur and how wheeling will affect a utility's customers. This two-pronged approach is used to analyze different types of wheeling transactions. Four wheeling scenarios are analyzed.

1. Wheeling from Utility to Utility

Wheeling from utility to utility traditionally has been done to strengthen reliability of the power supply system and to reduce costs. It is relatively prevalent. More recently it has been used to obtain large scale power purchases from Hydro-Quebec and the New Brunswick Electric Power Commission. The possibility of additional major purchases from Hydro Quebec raises economic and policy questions, which are discussed in Section C below.

However, apart from purchases for use in Maine, it is clear that Maine utilities could benefit substantially from wheeling Canadian power through the state to utilities in southern New England. How these benefits should be allocated among the utilities and Maine consumers is another significant question.

## 2. Wheeling from Small Producer to Outside Utility

Maine utilities have contracted to purchase substantial quantities of electricity from small power producers within the state. However, this trend is likely to slow because of:

- a. A reduction or elimination of federal income tax benefits;
- b. The avoided costs on which these contracts are based are dropping, translating into lower prices paid to small power producers;
- c. Falling oil prices reducing the incentive to replace oil; and
- d. The availability of low cost Canadian power.

Maine is well-suited for small power production because of the nature of our industry and resources. Wheeling power to utilities out of state where power costs are much higher may become more common. The implications for Maine of wheeling power from small power producers to southern New England are first, a higher price for small generator's output possibly increasing electric rates within the state, and second an erosion of Maine utilities' ability to sell power to these same users.

This raises important policy questions on whether Maine should encourage, discourage or let the market decide on how much small power producers export from the state. The effects of this decision depends on whether Maine utilities are allowed to charge a proper rate for wheeling and whether this form of wheeling promotes expansion of small power production facilities or simply diverts them from Maine users to those further south.

Allowing existing facilities to wheel power to outside utilities would almost certainly raise electric rates and not encourage the development of new facilities. PURPA recognized this problem and excluded existing facilities from its techniques to encourage development of small power facilities.

## 3. Wheeling from Outside Utility to End-User

Allowing end-users of electricity to "shop around" for the cheapest power supply and have the local utility wheel it to them would fundamentally change the way the electric industry has been organized. If previously unavailable low cost power is wheeled into the State, Maine ratepayers and utilities could benefit. However, if the power wheeled to the end-user is not new to the system, or if the system has

an oversupply of power, the fixed costs of the utility system are shifted onto the users that remain on the system. End-users that bypass the system would benefit from cheaper power, but rates would go up for ratepayers that stay on the system.

Two policy questions emerge from this scenario. The first concerns back-up power. If utility to end-user wheeling is allowed, it is not clear whether the host utility would have to provide back-up service for the purchased power and thus maintain more capacity and whether the end-user would pay the full cost of this back-up capacity.

The second issue concerns whether the end-user contracting for outside power should be allowed to reconnect to a utility after rates stabilize. Because of the expected trend of higher electric rates for the next few years followed by more moderate increases, an end-user may find it profitable to wheel power in from an outside source for the next five years then return to the host utility when the rates are more attractive. Unless a sufficient termination or reconnection charge is required, the end-users can avoid paying their share of a utility's fixed costs, shifting those costs to other ratepayers. The wheeling legislation enacted in 1986, relieved the host utility of the obligation to serve if an end-user opts to receive power from an affiliate.

#### 4. Wheeling-- Small Producer to End-User

A small power producer might sell power to an end-user, using the host utility's lines to wheel the power. Although this situation is closely related to the scenarios described above, two problems exacerbate the concerns previously discussed. First, the end-user would probably require back-up power from the host utility since it may rely on the output of only one plant for primary power. Also, these wheeling contracts are typically for a limited time with the end-user having to return to the host utility at some point. This scenario may tend to shift costs onto the customers remaining on the utility system.

#### B. Wheeling Rates

The Federal Energy Regulatory Commission (FERC) has only limited authority to mandate wheeling although they do have authority to set the wheeling rates paid to the utility. Utilities submit their negotiated wheeling rates to the FERC. In principle, the FERC accepts these rates if they show a cost basis or reasonable sharing of savings. In

practice FERC has always accepted the rates as filed. In their review, the FERC uses an embedded cost concept based on the utility's investment in transmission lines, its expenses in operating those lines, and the proportion of wheeling to the total use of the lines. This approach reflects a utility's actual investment but that does not necessarily represent the worth of the line to the utility and thus could allow wheeling customers to pay substantially less than full market value for capacity on some transmission lines.

In response to this problem three alternative approaches have been developed, but not yet accepted by FERC for rate-setting:

1. Revenue Protection Rates-- A sufficiently high wheeling rate to enable the utility to maintain its rate of return without raising rates to the remaining ratepayers.
2. Shared Savings-- This rate is set as the incremental cost of wheeling plus a share, generally 15%, of the end-user's net savings from the transaction. This rate is designed to assure that both the customer's and utility's incentives for wheeling are retained.
3. Long Run Marginal Costs-- This method provides a measure of the cost of providing new transmission capability to replace that amount used by the wheeled power.

### C. Canadian Purchases

Canadian power is now purchased directly from New Brunswick and, through NEPOOL, from New Brunswick and Hydro-Quebec. This power is priced at a specified percentage of the purchasing utility's cost to produce it themselves from fossil fuel. Thus it is cheaper for the utilities to purchase Canadian power than to obtain it from domestic fossil-fueled plants. Maine utilities purchase from New Brunswick about 9% of the capacity and 18% of the electric energy needed to serve the state.

Given the expected economic benefits of purchasing power from Canadian sources, Maine utilities stated that they expect to rely on Canada for 20 to 30% of the state's electric capacity needs by the year 2000. As a group, the cogenerators and small power producers who participated in the study tend to believe this level is too high and that Maine should rely more heavily on indigenous resources. On the other hand, large industrial customers are interested in saving money on electric power.

Purchasing Canadian power relieves New England from having to build extra capacity and delivers low cost power that benefits both the utilities and the ratepayers. But, while the rates paid for this power are favorable, importing power raises some policy and economic questions. The PUC report finds that it is unlikely that any approved contract between a Maine

utility and a Canadian power source would be broken, so the security of this source does not appear to be an issue. The remaining issue is, from an economic perspective, how much Maine should rely on imported power as compared to power generated from renewable resources in-state and power generated by plants in Maine using fuel such as oil or uranium, imported from out-of-state.

D. Competition

Recent trends in the cost of new generating capacity are undermining the argument that electric generation is a natural monopoly. Competition in power production and generation is fairly prevalent in electric utilities in Maine as evidenced by the abundance of small power producer purchases and the option of purchasing Canadian power. While competition for generation of power is not new, end-user level competition is beginning to emerge. Wheeling to end users is one indication of this trend and it could have the effect of shifting costs to rate payers that remain on a utility's system. Competition for electric transmission is not being proposed; the traditional arguments favoring a monopoly for electric transmission lines still hold up for financial, efficiency and aesthetic reasons.

## CHAPTER VII

### LEGAL ANALYSIS OF TRANSMISSION AND WHEELING ISSUES

This chapter provides a discussion and analysis of the legal issues surrounding transmission and wheeling of power in an effort to characterize the state of the law. The chapter identifies and discusses legal questions that have not yet been resolved.

#### A. Statutes Governing Wheeling of a Utility's Power

This section discusses Maine's authority to govern wheeling under four different scenarios. States generally are not preempted by the federal government from setting rates for retail electricity transactions and wheeling over local distribution lines, in contrast to higher-voltage transmission lines. The Federal Energy Regulatory Commission (FERC) sets rates for wheeling and wholesale power sales but cannot order wheeling, thus states are not preempted by the Federal Power Act from ordering wheeling. However, ordering interstate wheeling may be preempted by the Commerce Clause.

##### 1. Utility to End User not in Utility's Service Territory

Public utilities have protected retail service territories but not wholesale service territories, thus any utility may sell and distribute electricity to any other utility without PUC approval.<sup>1</sup> For retail transactions, PUC approval is required for any utility, Maine or Canadian, to transmit and sell electricity in another public utility's service area. However, the PUC must find that public convenience and necessity require the second utility coming in.<sup>1</sup> This is occasionally done for isolated small customers.

Under current law, when a host utility loses a customer to another utility it retains the obligation to provide back-up power. The customer also retains an option to reconnect.<sup>2</sup> The PUC has the authority to prevent unfair costs for providing back-up service and reconnection from falling on the host utility and its remaining customers,<sup>1</sup> however, the mechanisms for implementing this have not been developed. If new transmission lines are constructed which require PUC approval, the PUC could attach conditions on the approval to protect the host utility. The obligation to supply back-up capacity is relieved for wheeling between affiliated interests by recent legislation<sup>3</sup>.

##### 2. Wheeling between Utilities

Legislation passed in 1986 clarified the PUC's authority with respect to interutility wheeling. The PUC may require wheeling of power from one utility to another if it finds that it is in the public interest and meets reasonable

conditions.<sup>4</sup> Under the statute this wheeling may not result in an uncompensated loss, place an undue burden on the wheeling utility or its customers, or impair the service of the wheeling utility.<sup>5</sup> An uncompensated loss could be interpreted to include lost opportunity costs, although that theory has not been tested. The PUC's authority to require wheeling may have existed previously in another section of the statutes,<sup>6</sup> although it has never been exercised.

Although the PUC can order utilities to wheel it is not clear whether the PUC can prohibit an unreasonable wheeling agreement between two utilities in every case. But if the agreement involves transmission services over a line with capacity greater than 100 kilovolts for longer than 3 years, PUC approval is required.<sup>7</sup> Shorter contracts and smaller lines are not explicitly covered by this statute, but may be covered under the PUC's authority to require Maine utilities to cease unreasonable practices.<sup>8</sup> However, this authority probably would be disputed by the utilities.

Another mechanism for PUC authority over unreasonable wheeling contracts is through adoption of ratesetting policies which reflect the costs or benefits of a wheeling agreement.

### 3. Direct Wheeling from Canadian Utilities to Maine Consumers.

The PUC report discusses direct wheeling from Canadian generators to Maine end-users in the context of rate design. It states that importation of power directly to an end-user amounts to nothing more than a shift in costs among ratepayers, unless the end-user has unique access to lower cost power. The PUC must approve of the wheeling transaction as discussed in sub-section 1, however the statute does not give detailed guidance. The PUC also has authority to determine the structure of rates and whether those rates meet the statutory standard of justness and reasonableness. PUC notes that rate design should be cost-based and that marginal costs as well as lost opportunity costs for the host utility should be included.

### 4. State Importation of Canadian Power

Since 1981 the PUC, when authorized by the Governor, may buy power outside the State and resell it to electric utilities.<sup>9</sup> Now that Maine utilities are actively importing power this authority is unlikely to be used.

## B. Statutes Governing Wheeling of a Non Utility's Power

This section discusses the legal issues arising when a non-utility wheels power to another non-utility.

### 1. Wheeling to Associates and Affiliates

A Small Power Producer or Cogenerator (sometimes called a Qualifying Facility (QF)) may transmit electricity through its private property for use by itself, its tenants, or its associates in the facility without PUC regulation.<sup>10</sup> The generation and transmission of power in any quantity through private property for use of the generator or its tenants is unregulated.<sup>11</sup> An industrial enterprise must be allowed to transmit power over utility lines to an "affiliate" provided that it is unlikely to result in an uncompensated loss to the utility or its customers, or unreasonably impair the ability of the utility to serve its in-State customers.<sup>12</sup>

The PUC report has identified two unidentified terms of interest in this statute: first, "affiliated" is not defined so it is not clear how much ownership is required to be considered an affiliate. The term "industrial enterprise" also is not defined. Are dams used only for power production and boilers used in manufacturing to be considered the same? If such ambiguities cannot be resolved by regulation, statutory definition of these terms may be necessary.

### 2. Regulation of Sales to End-Users

The PUC report argues that sales by a non-utility power producer directly to users may bring the seller under the purview of the PUC. Some commenters argue that sales to a single buyer do not make one a public utility. However, the PUC report disagrees. A non-utility may require PUC approval to begin selling power but it is not clear how much jurisdiction the PUC has over economic or service regulation after approval is granted. This issue may be resolved on a case-by-case basis.

### 3. Wheeling to Another Utility

Rather than purchase power from a QF in its territory a utility may by mutual agreement transmit the power to another utility.<sup>13</sup> For example, this arrangement would apply where a QF in CMP's service territory may want to sell to BHE because it has a higher avoided cost. Consequently, CMP would not be required to pay the QF, the QF gets a higher rate for its power, and BHE gets needed electricity. In addition, CMP would charge a wheeling fee.

The new statute gives the PUC authority to require wheeling of power from a generator in one utility service area to another utility. The generator may be a QF, a utility or any person.<sup>4</sup>

The PUC report expresses concern over the "sales impact" which occurs when a non-utility power producer sells the power it produces to someone other than the local utility, and in turn buys back power from the local utility. If the power producer buys the utility power for a higher rate than the utility's cost to produce the power, then this combination benefits the utility and all the rate payers, as well as the power producer. If however, the utility's cost to produce that

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power was greater than the rate paid by the power producer, it could create cost burdens on the utility's other customers.

The PUC report suggests several ways to recover the costs or benefits of wheeling power, although to date none of them has been used in Maine:

a. A differential charge for industrial power could be assessed the power producer when it comes on line. However, this discriminates against the power producer because a similar manufacturer that does not produce power would get a better rate for power.

b. The rate for all large industrial customers (or all customers) could be made higher or lower depending on the impact of the sale. In the absence of any other decision, this happens de facto.

c. The additional charges could be recovered in an "interconnection charge," a fee charged the power producer to connect into the system. By not calling it a wheeling charge per se, the FERC's authority would not be preempted and the PUC could require that the true cost of providing the facility with power be incorporated in this charge. Some commenters feel this would not survive legal scrutiny because it skirts the intent of FERC rate-setting.

There is no specific authority for the PUC to prohibit unreasonable wheeling between an end-user and a utility, but in a rate case the PUC can prohibit the utility from recovering unreasonable wheeling costs.

### 3. Wheeling Outside the State

Although the Maine Statute<sup>4</sup> does not distinguish between wheeling to electric utilities within and outside of the state, the PUC has no jurisdiction outside the state. The Commerce Clause of the U.S. Constitution may preempt state authority in interstate wheeling agreements. However, PUC argues that it is best to leave State law silent on the Constitutional limits of state authority in order to maximize state control.

#### C. Access to Transmission Lines Traversing the State

Maine utilities must get PUC approval to erect a transmission line of 100 kilovolts or more.<sup>14</sup> There is no statutory requirement for reasonable access, but the position of the PUC is that they will make approval of a line contingent on reasonable access.

The construction of transmission lines by out of state utilities is allowed in Maine,<sup>15</sup> but only if domestic utilities own a majority interest. PUC authority over domestic utilities provides the opportunity to regulate the line and thus would provide access. It is unlikely that non-utilities could construct a line because they lack the power of eminent domain.

#### D. Importation of Canadian Power

Maine utilities are required to obtain PUC approval for the contractual importation of power from Canada.<sup>7</sup> The transmission line designed to carry this power would also require PUC approval,<sup>14</sup> as would the purchase by a utility of an interest in transmission capacity to import Canadian power.<sup>7</sup> Thus, the need for and level of Canadian imports would be reviewed including an assessment of the economics, reliability and implications of the power mix. The PUC also has rate-setting jurisdiction of a utility importing Canadian power and can influence decisions in that way.

#### E. Federal Preemption Issues

1. The Federal Energy Regulatory Commission (FERC) has exclusive jurisdiction in any system that is interconnected and capable of transmitting energy across state boundaries, whether or not the energy actually does cross state boundaries.<sup>16</sup> States do not generally have authority to set wheeling rates however, Texas is an exception because its grid is self-contained. The FERC has rate authority over any interstate wheeling.

FERC has rate jurisdiction over transmission of power but not distribution. Typically, power lines of 69 Kilovolts or below are considered distribution lines. States could probably set wheeling rates if the arrangement only involved the distribution system as is the case when the producer and customer are in the same utility's territory. However, that authority has not been tested.

States may regulate rates when the wheeling utility is an REA rural power cooperative.<sup>17</sup> This may also be true for other federal, state or municipal entities, under the same theory that their basic operation consists of supplying power from producers to users within the state, with only incidental effects on interstate commerce.

#### 2. State Authority to Order or Prohibit Wheeling

The PUC report argues that FERC generally does not have the authority to order or prohibit wheeling, thus, state authority to order wheeling is not pre-empted. This theory has not been tested in court and FERC has not contested it. However, any activities by a state must be consistent with requirements of the Federal Power Act, for example, the encouragement of small power production.

A state's authority to order or prohibit wheeling must be exercised in a way that does not unreasonably burden interstate commerce. Thus, the Commerce Clause may preempt a state from ordering wheeling out of or into the state.

### 3. State Authority over Sales Outside the Seller's Service Territory

The sale of electricity to a consumer is a retail sale and states have jurisdiction over these sales within their boundaries. The Federal Power Act only preempts wholesale and transmission transactions. The 1978 Public Utilities Regulatory Policy Act (PURPA) amendments to the Federal Power Act authorizes FERC to exempt Qualifying Facilities (QF's) from State regulation if necessary to encourage their development, and FERC has done so. However, under its authority to regulate utilities, the State can still set the maximum avoided cost to be paid by the utility that receives the power, and PURPA does not preempt States on retail transactions by QF's.

The PUC report argues that State regulation or prohibition of sales directly to consumers by out of state or Canadian sellers would likely be upheld because of the State's strong interest in preserving the monopoly utility structure. The report also argues that a State may allow or mandate sales to a consumer in another State, but not prohibit it without possibly violating the Commerce Clause. However, any out of state transactions can be considered in setting a utility's rates for in-state customers.

#### F. Antitrust Considerations

The U.S. Supreme Court has held that federal antitrust law requires a utility to wheel its power to a municipal utility. Thus, the refusal of a utility to wheel power could result in an action for treble damages if the power producer is negatively affected. Broader situations have not been tested in court but antitrust remedies may be available. Maine law parallels the federal law.

#### G. Activity in Other States

1. California statutes authorize their PUC to require wheeling from a private producer for use within the state. The PUC may also disapprove wheeling arrangements.
2. Connecticut statute requires utilities to wheel from a private producer to another utility or to an affiliate of the producer under DPU order. The DPU may buy power out of State and resell to utilities.
3. Florida statute authorizes the PSC to require wheeling from one utility to another. The PSC requires, by rule, wheeling for QF's and self-service wheeling. "intrastate" rates are set by the PSC, "interstate" by FERC.
4. Massachusetts DPU regulations require utilities to wheel power for QF's, at the FERC-approved rates.

5. Minnesota statute requires wheeling from QF's of 30 kilowatts or more to in-state utilities.
6. New Hampshire statute allows QF's up to 5 Megawatts to sell energy at retail to 3 non-utility purchasers without regulation. The statute requires utilities to wheel between the purchaser and the QF upon PUC order.
7. New Jersey major utilities have or soon will agree to provide wheeling. The rates are under discussion.
8. New York statute requires utilities to purchase or wheel from alternate energy producers under PSC order.
9. North Carolina Commission will consider requests for wheeling order case by case. (Apparently they feel they have the authority to order).
10. South Carolina Commission order asserts jurisdiction over wheeling orders, and they will consider complaints case-by-case.
11. Texas PUC rules require wheeling for utilities or QF's if there is sufficient capacity. Since Texas is not in the interstate grid, their PUC sets the rates.

End Notes, Chapter VII

1. 35 MRSA §§2301, 2302
2. 35 MRSA §§51, 102, 212
3. 35 MRSA §2330(4)
4. 35 MRSA §2330(3) (new)
5. 35 MRSA §2330(2) (new)
6. 35 MRSA §256
7. 35 MRSA §13-B
8. 35 MRSA §294
9. 35 MRSA §2328
10. 35 MRSA §2325(2)
11. 35 MRSA §15(5)
12. 35 MRSA §2330(1) (new)
13. PUC Regulations Chapter 36.4(B)(4)
14. 35 MRSA §13-A
15. 35 MRSA §2311
16. Florida Power & Light Co. 29 FERC ¶61, 140 (Oct. 31, 1984)
17. Arkansas Electric Coop. v. Ark. Public Service Commission, 103 S. Ct. 1905 (1983)

CHAPTER VIII  
PROPOSED LEGISLATION

FIRST REGULAR SESSION  
-----

ONE HUNDRED AND THIRTEENTH LEGISLATURE  
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Legislative Document

No.  
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STATE OF MAINE  
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IN THE YEAR OF OUR LORD  
NINETEEN HUNDRED AND EIGHTY SEVEN  
-----

AN ACT to Clarify the Statutes for Transmission of Electric  
Power and to Study Related Issues  
-----

Be it enacted by the People of the State of Maine as follows:

Sec.1. 35 MRSA §13-B, sub-§5 is enacted to read:

5. Imported power. In its review of any petition for approval of the purchase of generating capacity or energy from outside the State, the commission shall consider the comparative economic impact on the state of production of additional power within the state from renewable resources and the purchase of the power from outside the state.

Sec. 2. 35 MRSA §2323, sub-§4 is enacted to read:

4. Affiliated interest. "Affiliated interest" means:

A. Any person who owns the controlling interest, as defined by the commission by rule, in an electric generation enterprise;

B. Any person, the controlling interest in which, as defined by the commission by rule, is owned by an electric generation enterprise; or

C. Any person in which the controlling interest, as defined by the commission by rule, is owned by an affiliated interest as defined in paragraph A.

Sec. 3. 35 MRSA §2330, sub-§1 is amended to read:

"1. ~~Affiliated industrial interests.~~ Upon the request of an industrial enterprise located in the State to transmit or wheel electric energy from the requesting enterprise to ~~another industrial facility~~ an affiliated interest in the State ~~owned-in-whole-or-in-part-by-or-otherwise-affiliated with-the-enterprise,~~ the electric utility shall enter into an agreement of not more than 30 years' duration to provide transmission or wheeling services subject to reasonable conditions and subject to the conditions of subsection 2."

Sec. 4. 35 MRSA §2330, sub-§5 is enacted to read:

5. Reporting. Any electric utility which provides transmission or wheeling services for electricity generated outside its service area or for electricity generated within its service area by any other generator of electricity for delivery outside of the utility's service area shall inform the commission of the identity of the generator and the terms and conditions for the transmission or wheeling. That report shall be filed within 30 days after any contract or agreement is signed.

Sec. 5. Monitoring and report by the Public Utilities Commission. The Public Utilities Commission with the assistance of the Office of Energy Resources and the Public Advocate, shall continue to monitor the various aspects of electric generation and transmission and report to the Governor and the Legislature, with any recommendations, by November 1, 1987. The report shall consider: wheeling from utility to utility; wheeling from producer to an outside utility; wheeling from an in-state producer to an end-user; and wheeling from an out-of-state producer to an end-user.

The report shall also analyze the bottlenecks for transmission of power from Maine to Southern New England, between Northern Maine and the rest of the State, and from Canada into Maine. Strategies for the State to alleviate those bottlenecks also shall be considered.

Finally, the report shall consider the effects of wheeling on consumers, utilities, and electric generators as a result of the introduction of competition into the provision of electric service.

STATEMENT OF FACT

This bill is the report of the study of electric power transmission and purchases conducted by the Joint Standing Committee on Utilities in accordance with Chapter 740 of the Public Laws of 1985. It clarifies the statutes that enable wheeling between affiliated parties and requires the Public Utilities Commission to study the issues, constraints and effects of wheeling electricity.

Section 1 amends the review of major power purchases under 35 MRSA §13-B to require the commission to consider the economic impacts of importing power from outside the state as compared to power production from renewable resources within Maine.

Section 2 amends The Small Power Production Facilities Act to add a definition of "affiliated interest". Affiliated interests are defined to have the controlling interest in the generating plant in question, to have their controlling interest owned by the electric generation enterprise in question, or to have the controlling interest in both the generator and the end-user owned by a single third party. The term is defined to make clear that there must be a substantial relationship between the power producer and end-user. The PUC is expected to define "controlling interest" by rule. Section 3 of the bill applies the term "affiliated interests" to wheeling between affiliated interests.

Section 4 enacts a reporting requirement for any utility that provides wheeling services. This provision will help the commission keep abreast of the volume and implications of wheeling by Maine utilities. The wheeling utility may satisfy the requirement by filing with the commission a copy of the contract which they file with the Federal Energy Regulatory Commission (FERC), or an appropriate excerpt from it.

Section 5 mandates the commission to monitor the progress of wheeling, and to analyze the potential bottlenecks to efficient power transport, strategies to alleviate these bottlenecks, and the effects of wheeling and increased competition on electric consumers and the industry. The Commission is to report on these matters to the Governor and the Legislature by November 1, 1987.



**APPROVED**

APR 18 '86

**BY GOVERNOR**

CHAPTER

740

**PUBLIC LAW**

STATE OF MAINE

IN THE YEAR OF OUR LORD  
NINETEEN HUNDRED AND EIGHTY-SIX

H.P. 1656 - L.D. 2327

**AN ACT to Permit Transmission of Electricity  
Between Affiliated Industrial Enterprises and  
to Study Power Purchases and Other Aspects  
of Transmission of Electrical Energy  
through the State.**

Be it enacted by the People of the State of Maine as follows:

Sec. 1. 35 MRSA §2330 is enacted to read:

§2330. Transmission or wheeling of electric power

1. Affiliated industrial enterprises. Upon the request of an industrial enterprise located in the State to transmit or wheel electric energy to another industrial facility in the State owned in whole or in part by or otherwise affiliated with the enterprise, the electric utility shall enter into an agreement of not more than 30 years' duration to provide transmission or wheeling services subject to reasonable conditions and subject to the conditions of subsection 2.

2. Conditions. The conditions shall ensure that the fulfillment of the transmission or wheeling agreement is unlikely to result in a reasonably ascertainable uncompensated loss by or place an undue burden on the wheeling utility or its customers and will not unreasonably impair the ability of the wheeling utility to adequately serve its customers in the State.

In the event that the person requesting wheeling and

the utility requested to transmit or wheel the electric energy are unable to agree to any matter pertaining to transmission or wheeling services, the commission may require the utility to provide the transmission or wheeling services under such conditions as may be reasonable, for a period of time determined by the commission to be reasonable.

3. Wheeling to electric utilities. Subject to all other provisions of this Title, any person may petition the commission for an order requiring one or more electric companies to transmit energy or energy and capacity from any utility, qualifying facility or other supplier of electricity to any utility. The commission may issue such an order if the proposed transmission or wheeling is in the public interest and meets reasonable conditions, including the conditions of subsection 2.

4. Capacity obligation. In the event a utility is required to provide transmission service under this section, the utility's obligation to provide electric service to the facility receiving the transmitted electricity shall thereupon cease, to the extent of the maximum level of electrical capacity demand met by that transmission.

Sec. 2. Study of wheeling and electric power purchases. The Joint Standing Committee on Utilities shall study the issues of wheeling and electric power purchases. The study shall consider the value and implementation of: Purchases of foreign power; requirements for in-state access to a reasonable portion of the power from any new transmission line traversing the State; and transmission or wheeling of power between unaffiliated enterprises within the State, as well as the relationship among wheeling, competition and deregulation of electric utilities.

The Joint Standing Committee on Utilities shall submit the committee's findings and recommendations to the First Regular Session of the 113th Legislature on December 3, 1986, together with any proposed legislation. Staff assistance to the joint standing committee shall be requested from the Legislative Council.

Funding shall be provided from the Legislative Account as approved by the Legislative Council.

The Public Utilities Commission, with the assistance of the Office of Energy Resources and the Public Advocate, is directed to prepare a factual report to assist the Joint Standing Committee on Utilities in this study. In preparing the report, the commission shall consult with representatives of interested parties, including industrial firms, businesses, customers, residential customers, elderly and low-income groups, electric utilities, cogenerators and small power producers. The report shall be submitted to the Joint Standing Committee on Utilities by November 1, 1986.

APPENDIX B: INTRODUCED BILL, 1986

1 SECOND REGULAR SESSION  
2

3 ONE HUNDRED AND TWELFTH LEGISLATURE  
4

5 Legislative Document

No. 2104  
6

7 H.P. 1493

House of Representatives, February 28, 1986

8 Approved for introduction by a majority of the Legislative Council  
9 pursuant to Joint Rule 26.

Reference to the Committee on Utilities suggested and ordered printed.

EDWIN H. PERT, Clerk

10 Presented by Representative McGowan of Canaan.

Cosponsored by Representative Vose of Eastport, Senator Baldacci of  
11 Penobscot and Representative Willey of Hampden.

12 STATE OF MAINE  
13

14 IN THE YEAR OF OUR LORD  
15 NINETEEN HUNDRED AND EIGHTY-SIX  
16

17 AN ACT to Permit Industrial Electric  
18 Consumers to Purchase Energy from and  
19 through Transmission Lines Carrying  
20 Energy from Canada through the State.  
21

22 Be it enacted by the People of the State of Maine as  
23 follows:

24 Sec. 1. 35 MRSA §13-A, 3rd ¶, as enacted by PL  
25 1971, c. 476, §1, is amended to read:

26 In its order pertaining to any transmission line  
27 intended to be used solely to connect one or more of  
28 the State's electric utilities with one or more elec-  
29 tric utilities located in the United States, the commis-  
30 sion shall make specific findings with regard to  
31 the need for such the facilities and if the commis-  
32 sion finds that a need exists, it shall issue a cer-  
33 tificate of public convenience and necessity for the  
34 facilities proposed. If the commission orders or al-  
35 lows the erection of such the facilities, such order  
36 shall be subject to all other provisions of law and

1 the right of any other agency to approve said the fa-  
2 cilities.

3 Sec. 2. 35 MRSA. §13-A, as amended by PL 1983, c.  
4 237, is amended by adding after the 3rd paragraph 2  
5 new paragraphs to read:

6 In its order pertaining to any transmission line  
7 intended in whole or in part to carry electric energy  
8 from Canada to purchasers in the State or through the  
9 State to purchasers in other states, the commission  
10 shall make specific findings on whether a need exists  
11 for the facilities; whether electric utilities  
12 servicing customers in the State have a reasonable op-  
13 portunity to purchase energy or energy and capacity  
14 on a just and reasonable basis from the owners or op-  
15 erators of the line or from the Canadian entities  
16 selling energy through or to the line; whether elec-  
17 tric utilities subject to commission jurisdiction  
18 which participate in the construction or ownership of  
19 the line have adequate opportunity to profit from  
20 construction or ownership of the line; and whether  
21 industrial consumers located in the State have a com-  
22 mercially reasonable opportunity to contract on a  
23 just and reasonable basis for the purchase of energy  
24 or energy and capacity from the owners or operators  
25 of the line or from the Canadian entities selling en-  
26 ergy through or to the line. The commission shall  
27 ensure that purchases from or through the line by any  
28 industrial consumers located in the State are not  
29 likely to result in a reasonably ascertainable uncom-  
30 pensated loss by the ratepayers of the State's elec-  
31 tric utility which has most recently provided service  
32 to the industrial consumer.

33 If the commission makes an affirmative finding on  
34 each of these matters, it shall issue a certificate  
35 of public convenience and necessity for the proposed  
36 facilities. If the commission issues such a certifi-  
37 cate, the proposed facilities shall be subject to all  
38 other provisions of law and the right of any other  
39 agency to approve the facilities.

40 Sec. 3. 35 MRSA §2325, sub-§2, as amended by PL  
41 1981, c. 450, §5, is further amended to read:

1           2. Use of electricity by the producer. Any small  
2 power producer or cogenerator may generate ~~or~~ and  
3 distribute electricity through his private property  
4 solely for his own use, the use of his tenants or the  
5 use of, or sale to, his associates in a small power  
6 production or cogeneration facility. ~~and not~~ The gener-  
7 eration, transmission or distribution of electricity  
8 for the use of or sale to others without approval or  
9 regulation by the commission shall be limited as pro-  
10 vided in subsection 4.

11           Sec. 4. 35 MRSA §2325, sub-§4 is enacted to  
12 read:

13           4. Transmission or wheeling of electric energy.  
14 The transmission or wheeling of electric energy shall  
15 be as follows.

16           A. Upon the request of a small power producer or  
17 cogenerator, located within the State, for the  
18 transmission or wheeling of electric energy to an  
19 industrial consumer of electricity located within  
20 the State through the transmission or distribu-  
21 tion system of one or more electric utilities,  
22 the electric utility shall enter into an agree-  
23 ment of not more than 30 years duration to pro-  
24 vide such transmission or wheeling services sub-  
25 ject to reasonable conditions. The conditions  
26 shall ensure that fulfillment of the wheeling  
27 agreement between the small power producer or  
28 cogenerator and the wheeling utility:

29                   (1) Is unlikely to result in a reasonably  
30 ascertainable uncompensated loss by or place  
31 an undue burden on the wheeling utility; or

32                   (2) Will not unreasonably impair the abili-  
33 ty of the wheeling utility to adequately  
34 serve its customers in the State.

35           B. In the event that the small power producer or  
36 cogenerator and the utility requested to transmit  
37 or wheel the electric energy are unable to agree  
38 on any matter pertaining to transmission or  
39 wheeling services, the commission shall require  
40 the utility to provide the transmission or  
41 wheeling services under such conditions as may be

1 reasonable, for a period of time determined by  
2 the commission to be reasonable. The commission  
3 shall determine the rate for transmission or  
4 wheeling only if no federal agency with authority  
5 to set such a rate does so within a reasonable  
6 time after a request is made. The failure or re-  
7 fusals to act of a federal agency with authority  
8 to set a transmission or wheeling rate shall not  
9 justify refusal of an electric utility to trans-  
10 mit or wheel electric energy. Any rate set by a  
11 federal agency with authority to set such a rate  
12 shall supersede any rate set by the commission.

13 Sec. 5. 35 MRSA §2330 is enacted to read:

14 §2330. Transmission or wheeling between affiliated  
15 industrial enterprises

16 Upon the request of an industrial manufacturing  
17 enterprise located in the State to transmit or wheel  
18 electric energy to another industrial facility in the  
19 State owned in whole or in part by or otherwise af-  
20 iliated with the enterprise, the electric utility  
21 shall enter into an agreement of not more than 30  
22 years duration to provide transmission or wheeling  
23 services subject to reasonable conditions. The con-  
24 ditions shall ensure that the fulfillment of the  
25 transmission or wheeling agreement between the indus-  
26 trial manufacturing enterprise and the transmitting  
27 or wheeling utility:

28 1. Loss by or burden on wheeling utility. Is  
29 unlikely to result in a reasonably ascertainable un-  
30 compensated loss by or place an undue burden on the  
31 wheeling utility; or

32 2. Unreasonable impairment of service. Will not  
33 unreasonably impair the ability of the wheeling util-  
34 ity to adequately serve its customers in the State.

35 In the event that the industrial manufacturing  
36 enterprise and the utility requested to transmit or  
37 wheel the electric energy are unable to agree to any  
38 matter pertaining to transmission or wheeling ser-  
39 vices, the commission shall require the utility to  
40 provide the transmission or wheeling services under  
41 the conditions as may be reasonable, for a period of

1 time determined by the commission to be reasonable.  
2 The commission shall determine the rate for transmis-  
3 sion or wheeling only if no federal agency with au-  
4 thority to set such a rate does so within a reason-  
5 able time after a request is made. The failure or  
6 refusal to act of a federal agency with authority to  
7 act shall not justify refusal of an electric utility  
8 to transmit or wheel electric energy. Any rate set  
9 by a federal agency with authority to set such a rate  
10 shall supersede any rate set by the commission.

11 **Sec. 6. Legislative Findings** The Legislature  
12 finds that the Small Power Production Facilities Act  
13 and related legislative, regulatory and utility ac-  
14 tions since the energy crisis of the 1970's have in-  
15 creased the efficiency of the generation, delivery  
16 and consumption of electricity and other forms of en-  
17 ergy in the State. By encouraging energy generation  
18 by nonutility sources and increasing reliance on  
19 indigenous and renewable energy sources, these ac-  
20 tions have decreased the long-term cost of energy in  
21 the State, lowered the capital requirements of the  
22 State's electric utilities and strengthened and di-  
23 versified the State's economy.

24 The Legislature agrees with the recent findings  
25 of the Industrial Stability Commission that "elec-  
26 tricity and energy prices are 2 important factors in  
27 determining whether certain industries prosper,  
28 whether they stay in an area and where they relocate  
29 and expand" and that "electricity and energy prices  
30 are particularly important for those industries which  
31 are very energy intensive and are subject to intense  
32 national or global competition."

33 The Legislature finds that the State's economy  
34 remains strongly dependent on the economic health of  
35 the paper, textile, shoe, plastics, forest products  
36 and similar energy intensive manufacturing indus-  
37 tries. These state industries, among others, are both  
38 energy intensive and subject to intense, and some-  
39 times unfair, national and global competition. Ac-  
40 cordingly, the Legislature concludes it must act to  
41 protect the public health, safety and welfare by re-  
42 moving additional obstacles to more efficient genera-  
43 tion, delivery and consumption of electric energy by  
44 industrial electricity consumers.

1 By permitting and encouraging more efficient com-  
2 binations of production and consumption of electric  
3 energy by Maine industry without allowing unreason-  
4 able burdens to be imposed on other electricity con-  
5 sumers or electric utilities, the State's economy may  
6 be preserved and strengthened. Further, the State's  
7 natural resources will be allocated more efficiently  
8 and the environment more prudently safeguarded by po-  
9 licies which encourage optimal combinations of pro-  
10 duction and consumption of electric energy.

11 The Legislature accepts the determination of the  
12 Industrial Stability Commission that purchases of en-  
13 ergy by industrial consumers directly from Canada may  
14 be in the public interest and should be further ex-  
15 plored. The Legislature finds that the government of  
16 Canada has increased the generation of electric ener-  
17 gy beyond the reasonably foreseeable needs of Canadi-  
18 an consumers and that efforts are underway to market  
19 Canadian energy in this State and other states. The  
20 Legislature finds that the construction of 2 large  
21 electric transmission lines from Canada through the  
22 State is under consideration and that an application  
23 for a certificate of public convenience and necessity  
24 has been filed with the Public Utilities Commission  
25 for the first of the 2 lines.

26 The Legislature recognizes that each of the lines  
27 will have a measurable and important impact on the  
28 State's environment. The Legislature also finds that  
29 the long-term costs of that impact may be outweighed  
30 by the availability of the lines and the energy mar-  
31 kets these lines can open in Canada to the State's  
32 electric utilities and industrial electricity consum-  
33 ers.

34 The Legislature further finds that significant  
35 differences exist between electric power exchanges  
36 among domestic utilities, which are subject to state  
37 and federal regulation, and electric power exchange  
38 between domestic utilities and the Canadian Govern-  
39 ment entities which perform the proprietary function  
40 of generating and transmitting electric energy.  
41 Among these differences are an historic refusal of  
42 the Canadian Government entities to deal with indus-  
43 trial consumers in the State, a competitive relation-  
44 ship between the Canadian Government entities and

domestic utilities and an inability of the Public Utilities Commission to regulate the price or quality of service of the Canadian entities. In light of these and related factors, the Legislature acts, in the protection of the public health, safety and welfare and in the exercise of its inherent jurisdiction over the dedication of capital to the providing of the utility services to assure the benefit of the transmission lines to the people of the State.

#### STATEMENT OF FACT

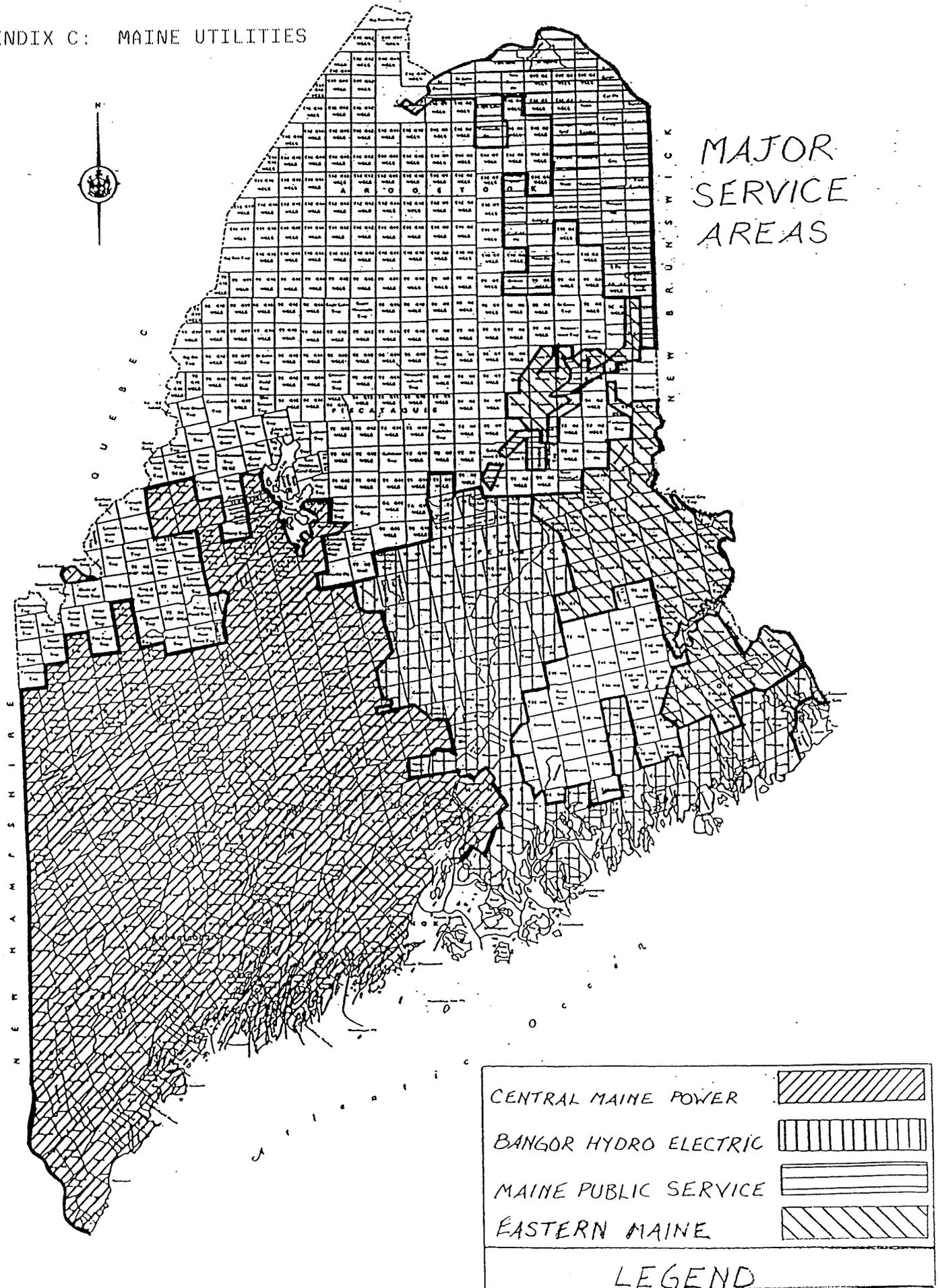
The purpose of this bill is to strengthen the State's economy by continuing the State's recent trends in the more efficient use of electricity and in the wise use of the State's indigenous and renewable resources for the production of electric energy. The bill is intended to encourage and permit more efficient generation, delivery and consumption of electric energy in several ways.

Specifically, the bill requires the Public Utilities Commission to issue a certificate of public convenience and necessity for any power transmission line from Canada only on a showing of need for the line, benefit to electric utilities located in Maine which will own or construct the line and benefit to electricity consumers located in this State. Industrial consumers must be allowed to buy power from or through the line if other ratepayers will not be harmed.

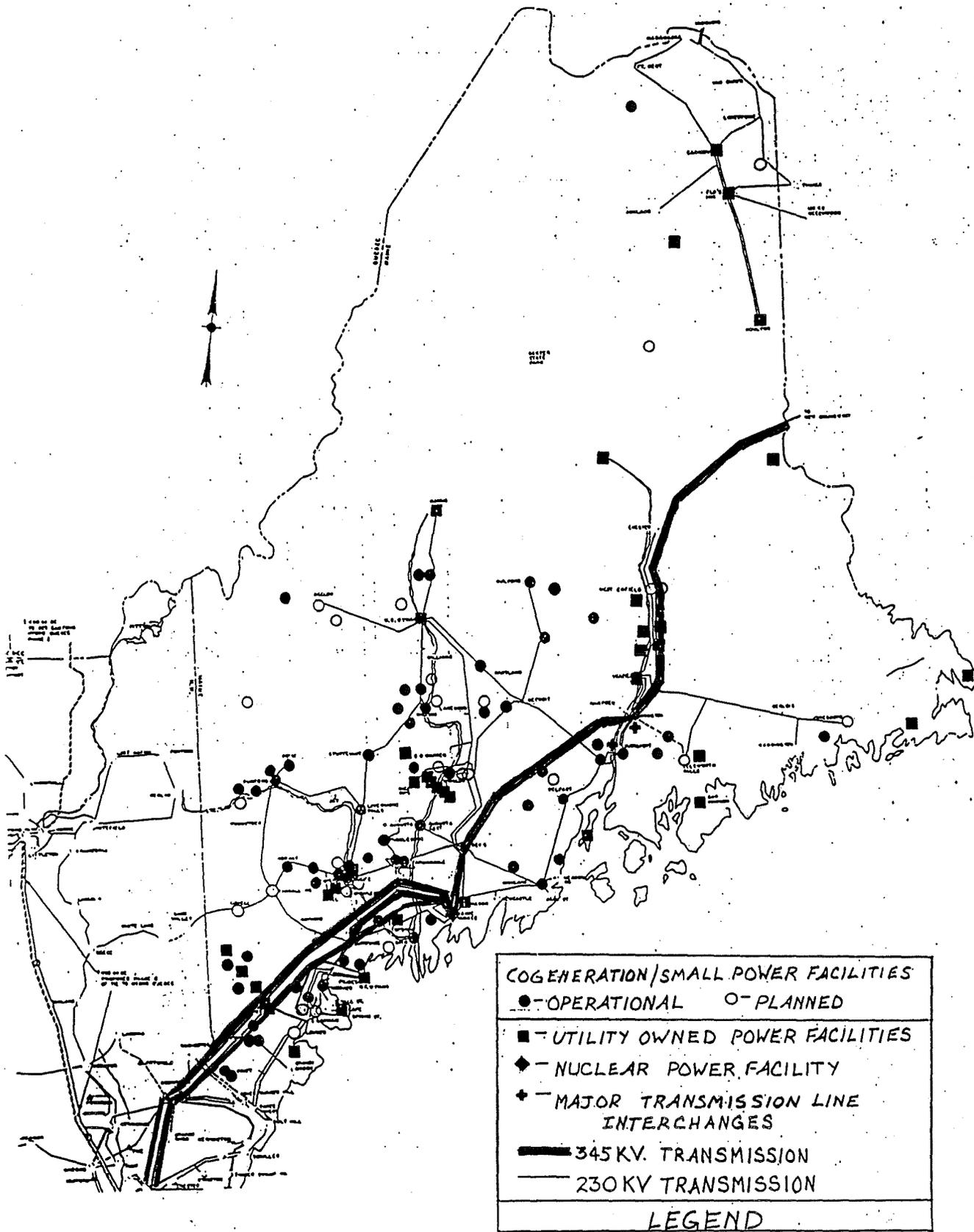
The bill also encourages and permits the wheeling or transmission of electric energy from small power producers or cogeneration facilities located in this State to industrial consumers of electricity located in this State, if unreasonable harm will not result to electric utilities or other ratepayers. Similarly, the bill encourages and permits the wheeling or transmission of electric energy from an industrial facility located in this State to an affiliated industrial facility also located in this State.

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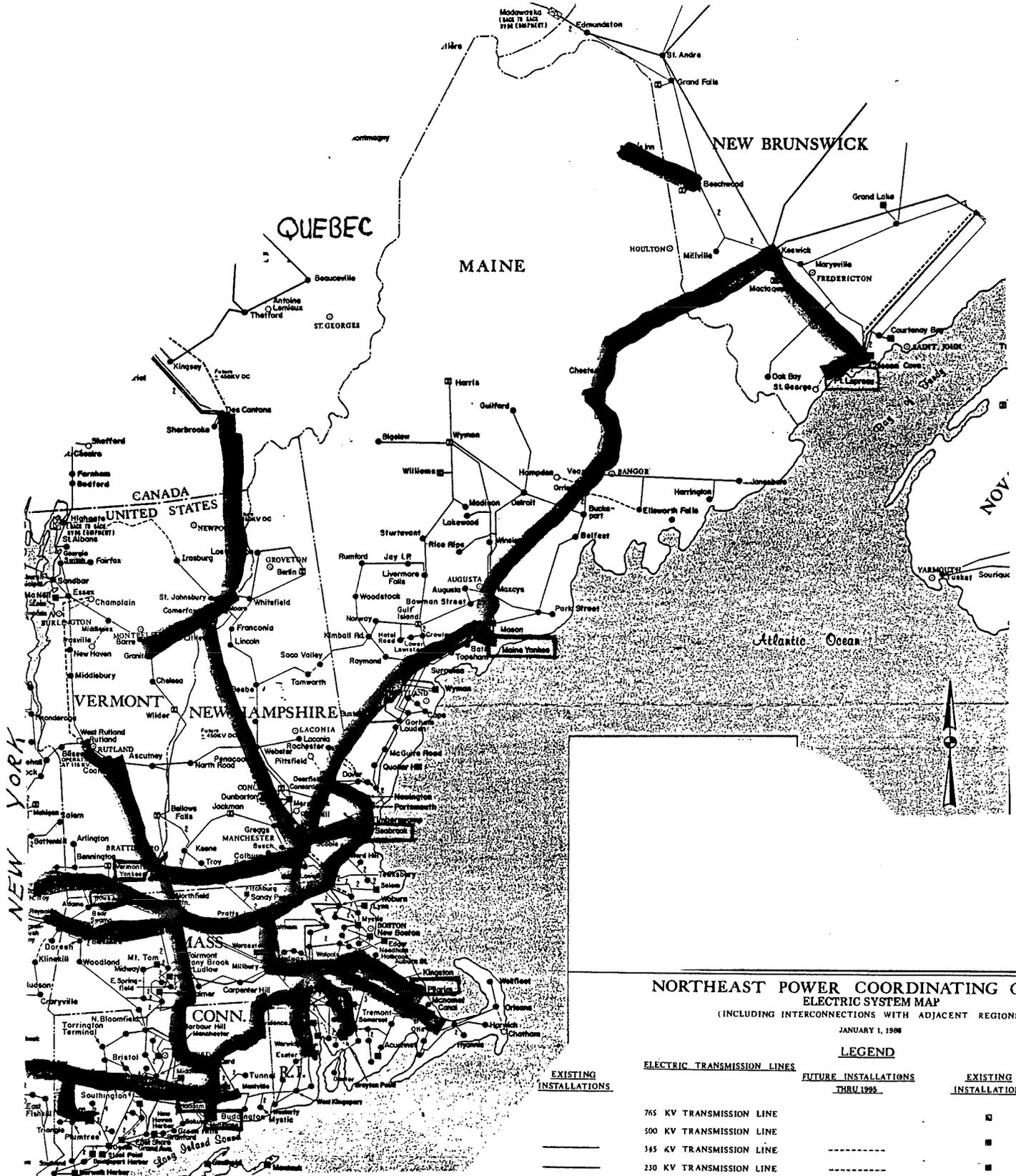
APPENDIX C: MAINE UTILITIES



APPENDIX D: ELECTRIC GENERATION & TRANSMISSION



APPENDIX E: NORTHEAST ELECTRIC SYSTEM



NORTHEAST POWER COORDINATING COUNCIL  
ELECTRIC SYSTEM MAP

(INCLUDING INTERCONNECTIONS WITH ADJACENT REGIONS)

JANUARY 1, 1986

LEGEND

EXISTING INSTALLATIONS	FUTURE INSTALLATIONS THRU 1995	EXISTING INSTALLATIONS
		□ N
		● PUI
		■ CONV
		○

FIGURE DENOTES NUMBER OF CIRCUITS WHEN MORE THAN ONE

COORDINATED BY NPCC STAFF

APPENDIX F: COGENERATION & SMALL POWER FACILITIES

CENTRAL MAINE POWER COMPANY

Power Purchase Contracts

December 1986

Bold horizontal lines represent changes in decrements.

H=Hydro  
T=Thermal  
W=Wind

	No. of Projects	Capacity (kW)	Annual Generation (mWh)
TOTAL HYDRO	55	127,141	643,253
TOTAL THERMAL	21	310,136	2,164,523
TOTAL WIND	2	14	5
<b>GRAND TOTAL</b>	<b>78</b>	<b>437,291</b>	<b>2,807,781</b>
Projects On-Line	60	212,355	1,740,295

PPA NO.	Project Name Location Sponsor	Purchase Period		Rating (kW)	Annual Generation (MWh)
		From	To		
1.	Barker Mill Auburn Maine Hydroelectric	04/1980	04/2000	1,600	8,500
2.	Scott - Westbrook Westbrook Scott/Div., S. D. Warren	10/1982	10/1997	62,000	451,600
3.	Scott - Somerset Hinkley Scott Paper Co.	12/1982	11/1997	45,490	356,900

PPA NO.	Project Name Location Sponsor	Purchase Period		Rating (kW)	Annual Generation (mWh)
		From	To		
4.	Gardiner Water District Gardiner Gardiner Water District H	07/1982	12/1997	130	500
5.	Gardiner Hydro Gardiner Gardiner Hydro Company H	07/1983	12/2002	1,150	6,500
(3.)	Scott/Somerset Hinckley Scott Paper Company T	12/1982	11/1997	0	22,600
6.	New England Ethanol (CONTRACT TERMINATED) T				0
7.	Goose River (CMP Dams 1 & 2) Belfast Maine Hydroelectric H	04/1983	05/1995	300	1,500
8.	Rocky Gorge South Berwick Rocky Gorge Corp. H	01/1984	01/1994	560	2,000
9.	I. P. Riley Dam Riley International Paper Co. H	10/1983	09/1999	7,800	36,800
	Otis Hydro Chisholm Otis Hydroelectric Co. H	12/1984	09/1999	10,000	52,600
10.	Bates Energy Associates (Bates College) Lewiston	12/1984	12/1994	1,250	7,600
	Bates Energy Associates Phase I (Incremental)	01/1987	12/2008	250	
	Phase II (Incremental) T	01/1987	12/2008	2,075	
11.	MERC Biddeford Maine Energy Recovery Co. T	01/1987	12/2006	16,500	100,000
12.	Quinn Hydrotech Frankfort Quinn Hydrotech H	12/1985	12/1997	400	1,200
13.	Gorbell Inc. Athens Gorbell Corp. T	09/1987	12/1997	13,800	86,800
14.	Browns Mill Dover-Foxcroft The Hydro Generating Co. H	03/1984	12/1997	600	3,000

PPA No.	Project Name Location Sponsor	Purchase Period		Rating (kW)	Annual Generation (mWh)
		From	To		
15.	Morgan's Mills Union	03/1984	12/1997	30	160
	Richard P. Morgan			H	20
16.	Milstar Mfg. Waterville	02/1984	02/2003	4,800	31,000
	Milstar Mfg. Co. Phase I (Incremental)			H	1,750
17.	Waverly Avenue Project Pittsfield	04/1984	12/1997	400	1,800
	Catalyst Energy Holding Corp.				
18.	Smelt Hill Dam Falmouth	04/1983	12/1997	1,200	4,000
	Cumberland Power Corp.				
19.	Kezar Falls (Upper & Lower) Kezar Falls	03/1984	12/1997	800	5,500
	L & V Smith				
	Ledgemere Limerick	01/1982	12/1997	400	2,000
	L & V Smith				
20.	Damariscotta Mfg. Company Damariscotta	03/1984	12/1997	550	2,500
	Lawrence J. Keddy				
21.	Eustis Mfg. Co. Eustis	03/1984	12/1997	312	1,000
	Lawrence J. Keddy				
22.	Great Works Hydro Co. South Berwick	03/1984	12/1997	500	2,000
	Lawrence J. Keddy				
23.	Greenville Mfg. Co. Greenville	03/1984	12/1997	720	3,000
	Lawrence J. Keddy				
24.	Norway Mfg. Co. Norway	05/1985	12/1997	350	1,300
	Lawrence J. Keddy				
25.	Pittsfield Mfg. Co. Pittsfield	03/1984	12/1997	980	5,500
	Lawrence J. Keddy				
26.	York Corporation Sanford	03/1984	12/1997	980	7,000
	Lawrence J. Keddy				
27.	Hackett Mills Minot	12/1985	12/1997	500	2,150
	Hackett Mills Hydro Assoc.				
28.	United Timber North Anson	12/1984	12/1997	1,800	12,600
	United Timber Corp.				

PPA NO.	Project Name Location Sponsor	Purchase Period		Rating (kW)	Annual Generation (mWh)
		From	To		
29.	Miller Hydro (Worumbo) Lisbon Falls Miller Hydro Group	H	04/1984 12/2001 05/1987 12/2001	900 13,100	2,500 17,000
	(29.)	Miller Hydro (Worumbo) Lisbon Falls Miller Hydro Group	H	1st/2nd Decrement Split 04/1984 to 12/1997	0
30.	Edwards Manufacturing Project Augusta Edwards Manufacturing Co.	H	04/1984 12/1997	3,500	15,000
31.	Pejepscot Paper Project Topsham Androscoggin Water Power Co.	H	05/1982 09/2002	13,880	69,100
32.	Chadbourne Cogenerating Pro Bethel P. H. Chadbourne Generating	T	09/1987 12/1998	1,600	14,900
33.	Fairfield Energy Venture Fort Fairfield U. S. Energy Corporation	T	07/1987 07/2002	30,000	160,000
34.	Robbins Lumber Inc. Searsmont Robbins Lumber Co.	T	10/1984 12/1996	600 600	800 2,668
35.	Quimby Generating Project Bingham K-D Wood Products	T	01/1987 12/2001	1,350	9,461
36.	Albert R. LaValley Project Sanford A. R. LaValley, Inc.	T	10/1984 12/1998	1,250	2,400
37.	Abenaki Project Madison Madison Paper Industries	H	09/1984 08/1999	8,405	53,251
38.	Anson Project Anson Madison Paper Industries	H	12/1984 08/1999	9,000	42,140
39.	Forster Mfg. Co. Project Strong Forster Mfg. Co., Inc.	T	02/1984 12/1996	1,250	3,000
40.	Greater Portland Resource Recovery Project Portland Greater Portland Council of Governments	T	01/1988 12/2007	8,941	35,300

PPA NO.	Project Name Location Sponsor	Purchase Period		Rating (kW)	Annual Generation (mWh)
		From	To		
(40.)	Greater Portland Resource Recovery Project Portland Greater Portland Council of Governments T	2nd/3rd Decrement Split	01/1988 to 12/2007	0	22,200
41.	Bridge St. Project Yarmouth Old Sparhawk Mill Hydro Co. H	06/1985	12/1994	270	1,000
42.	Dirigo Dowels, Inc. Project New Portland Dirigo Dowels, Inc. T	11/1985	12/1998	300	1,838
43.	Bates Fabrics Project Lewiston Lewiston Steam & Power Assoc. T	10/1985	12/2008	7,100	38,000
	Phase I Incremental Increase	07/1986		1,300	
	Phase II Incremental Increase	01/1987		3,400	
	Phase III Incremental Increase	10/1987		1,180	
44.	Pioneer Dam Project Pittsfield Christopher M. Anthony H	12/1986	12/1998	242	1,210
45.	Marcal Paper Mills, Inc. Mechanic Falls Marcal Paper Mills, Inc. H	12/1984	12/1998	960	5,000
46.	W. S. Libbey Co. Project Lewiston W. S. Libbey Co. H	07/1983	12/1992	720	1,500
47.	Greenville (SR/H) Project Greenville Swift River/Hafslund T	10/1986	09/2006	13,800	75,560
48.	Cumberland Mills Hydro Project Westbrook Scott/S.D. Warren Division H	03/1987	03/2007	2,295	10,000
49.	Scott-Winslow Hydro Kennebec Proj. Winslow Scott/S.D. Warren Division H	01/1988	01/2008	19,000	83,000
50.	Scott-Winslow Cogeneration Project Winslow Scott/S. D. Warren Division T	01/1988	01/2003	18,800	113,000
51.	Bath-Brunswick Refuse Disposal District Brunswick Brunswick Public Works Dept. T	07/1988	07/2008	2,550	13,400
52.	Aziscohos Dam Project Lincoln Plantation Androscoggin Reservoir Company H	07/1988	07/2008	5,460	25,100

PPA NO.	Project Name Location Sponsor	Purchase Period		Rating (kW)	Annual Generation (mWh)
		From	To		
53.	Benton Falls Hydroelectric Project Waterville Everett E. Whitman H	09/1987	09/2007	3,200	12,500
54.	Murray W. Thurston Mexico Murray W. Thurston, Inc. H	12/1985	12/1995	338	1,307
55.	Marsh Stream Project Winterport John C. Jones H	12/1984	12/1999	95	300
56.	Scientific Energy and Recycling Project Madison Energy Recovery Systems, Inc. T	10/1987	10/2007	36,100	51,500
(56.)	Scientific Energy & Recycling Pro Madison Energy Recovery Systems, Inc. T	3rd/4th Decrement Split	10/1987 to 10/2007	0	115,365
57.	Stony Brook Hydro Project Hanover Small Hydro East H	11/1984	11/1999	30	100
58.	Wight Brook Hydro Newry Small Hydro East H	11/1984	11/1999	30	100
59.	Havila S. Hawkins Hydro Camden H. S. Hawkins H	12/1984	12/1999	20	100
60.	City of Lewiston Lewiston City of Lewiston H	07/1987	12/1998	1695	4,800
61.	Foss Mill Brooks Peter C. Graham H	01/1985	01/1990	15	50
62.	Robert P. Hatch Alfred Robert P. Hatch W	01/1985	01/1990	10	4
63.	Whispering Valley Enterprises Hiram B. S. Peabody H	03/1985	03/1990	75	300
64.	Abbots Mills Rumford Jeness N. Buck H	06/1985	06/2000	99	175
65.	Starks Hydro Starks Jeness N. Buck H	12/1985	12/2000	50	100

PPA NO.	Project Name Location Sponsor		Purchase Period		Rating (kW)	Annual Generation (mWh)
			From	To		
66.	North New Portland Energy North New Portland North New Portland Energy, Inc.	H	03/1985	03/1990	100	500
67.	Marshco Knox Marshco Products Co.	T	01/1987	01/2002	50	375
68.	Barker Hydro Auburn ESI Hydropower	H	01/1987	01/2007	950	5,000
69.	Eagle Crest Wales Ronald Bard	W	12/1985	12/1990	4	1
70.	Sevey Hydro Ripley Ernest L. Sevey	H	12/1985	12/1990	10	30
(33.)	Fairfield Energy Venture Fort Fairfield U. S. Energy	T	07/1987	07/2002	0	82,000
71.	Littlefield Hydro Company Auburn Consolidated Hydro Company	H	01/1988	01/2008	1,000	5,000
72.	Windham Hydro L & V Smith Windham	H	01/1986	01/2001	30	130
(10.)	Bates Energy Associates Phase I Phase II Energy	T	01/1987 01/1987	12/2008	0	3,322 15,801
(43.)	Bates Fabric (Lewiston Steam & Power)  Phase I Phase II Phase III	T	  07/1986 01/1987 10/1987	12/2008	0	  9,855 24,145 7,532
73.	Brassua Hydro Taunton - Raynham Swift River/Hafslund	H	10/1988	10/2008	3,700	20,000
74.	East Outlet Big Squaw Township Swift River/Hafslund	H	10/1988	10/2008	1,140	5,350
75.	Carrabassett Power Project Stratton ARS Group	T	06/1988	06/2008	36,800	139,500

## BANGOR HYDRO-ELECTRIC COMPANY

## SMALL POWER PRODUCTION FACILITIES

PROJECT		PARTIES		ENERGY SOURCE	OPERATION DATE	CONTRACT EXPIRATION DATE	PLANT SIZE (KW)	EXPECTED ENERGY (MWH)
NAME	LOCATION	NAME	LOCATION					
SEBEC	SEBEC	SEBEC ELECTRIC PARTNERSHIPS LTD.	DANVERS, MA	HYDRO	<del>2 FEB</del> 1985	2025	900	4,100
LOWELL TANNERY	LOWELL	PUMPKIN HILL POWER CO.	ENFIELD, ME	HYDRO	<del>2 FEB</del> 1986	2016	850	3,000
COLUMBIA FALLS	COLUMBIA FALLS	K. V., INC.	COLUMBIA FALLS, ME	HYDRO	8 AUG 1983	1997	290	100
SOUADABSACOOK	HAMPDEN	ELEMENTS POWER CO.	HAMPDEN, ME	HYDRO	3 MAR 1983	2001	300	800
MILO	MILO	MILO HYDRO CO.	GREENWICH, CT	HYDRO	12 DEC 1982	1997	660	2,700
GREEN LAKE	GREEN LAKE	GREEN LAKE WATER POWER CO.	PITTSFIELD, ME	HYDRO	9 SEP 1984	2024	400	1,300
FORSTER	MATTAWAMKEAC	FORSTER MFG. CO., INC.	WILTON, ME	WOOD	10-OCT-1984	1986	1,000	1,800
ULTRAPOWER 5 *	WEST ENFIELD	ULTRAPOWER	IRVINE, CA	WOOD	12-DEC-1986	2016	24,500	0-182,000
ULTRAPOWER 6 *	JONESBORO	ULTRAPOWER	IRVINE, CA	WOOD	1 JAN 1987	2017	24,500	0-182,000
PERC *	ORRINGTON	PENOBSCOT ENERGY RECOVERY CO.	PORTLAND, ME	MSW	12 <del>FEB</del> 1987	2017	10,000	149,000
BEAVERWOOD 1 *	CHESTER	ALTERNATIVE ENERGY	BANGOR, ME	WOOD	10 OCT 1986	2016	15,390	100,000
DOWNEAST **	DEBLOIS	PEAT PRODUCTS OF AMERICA	BANGOR, ME	PEAT	11 NOV 1988	N/A	23,000	171,000

\* BHE resells a portion of this plant's output.

\*\* Output is sold to Boston Edison Co.

LONG-TERM POWER CONTRACTS UNDER PURPA

NAME	DATES	ENERGY MWH/YR	CAPACITY MW	PRICE ¢/KWH
Maine Public Service Company - Sherman Power Co. Thermal	1987-	-	<u>18</u> 18	-
TOTAL				

Source: PUC Division of Technical Analysis 1985

APPENDIX G: SUMMARY, PUC STAFF STUDY

STUDY OF ELECTRIC POWER TRANSMISSION AND PURCHASES

Report  
to the  
Joint Standing Committee on Utilities  
prepared by the  
Maine Public Utilities Commission Staff

November 3, 1986

Joseph Donahue  
Elizabeth Paine  
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Thomas Austin  
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Deborah Ross  
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Mitchell Tannenbaum

## SUMMARY

To the extent that conclusions are reached in this report, they are preliminary in nature and should not be construed as necessarily final determinations by the Commission.

### A. Purchases of Foreign Power

Given the level of technical reliability projected for electricity imports from Canada and the expected economic benefits of purchasing power from Canadian sources, Maine electric utilities expect to rely on Canada for between 20 and 30 percent of the State's electric capacity needs by the year 2000. Purchases of energy on an "as available" basis as distinguished from capacity purchases are limited only by the physical and technical limitations of transmission interconnections.

As a group, cogenerators and small power producers tend to believe that this level is too high and that Maine should rely more heavily on indigenous resources to meet the State's power needs. Increased purchases from Canada generally lower the price utilities are willing to pay to these facilities. Some large industrial customers are willing to sacrifice some level of reliability if they can purchase Canadian power directly and inexpensively. Presumably, price

and reliability are the relevant considerations and these customers are indifferent to the source of their power.

B. Existing Transmission System

The transmission system owned and operated by Maine's utilities is adequate to supply reliable, economic electric service to their customers. Maine's utilities note some areas where transmission capabilities are at or near their physical limitations. However, reconstruction, upgrading and/or the placement of qualifying facilities in favorable locations have or will correct any known deficiencies. The process used by the utilities to evaluate the existing system's performance and determine the need for upgrading the system is on a par with industry standards. Thus, there is a reasonable surety that an adequate and reliable transmission system will be maintained by the utilities in Maine to serve their customers.

C. Bottlenecks

New England's transmission system has limitations which prevent the maximum efficient use of New England's power sources. The major restrictions on transmission through or out of Maine are at the interconnections between Maine and New Hampshire and at the interface between northern New England and southern New England (the North-South Interface). There is

little that Maine can legally do to relieve the two major bottlenecks described. Efforts are being made through the New England Conference of Public Utility Commissioners to address the issue.

Under certain conditions, it is cheaper to run generating units in Maine and transmit the power to utilities in southern New England but it is impossible to transfer the energy from Maine to the south due to transmission constraints. The result is higher costs for all utilities within the NEPOOL system.

D. QF's Access to Transmission Facilities to Sell to Other Utilities, Affiliates or End-users

The Maine economy benefits substantially from the investment and job creation related to the construction and operation of QF's. Due to the large amount of QF power already under contract, the prices Maine utilities' will pay to QF's have diminished to a point where few new projects will be economic. Generally, the price utilities in southern New England are willing to pay for new facilities is significantly higher. Consequently, some new QF's may need access to the transmission lines in order to economically market their electric power to utilities outside of Maine.

E. Wheeling Between Unaffiliated Enterprises

If QF's are allowed access to transmission facilities to sell power to other utilities, does it follow that they should be allowed to sell power to other end-users? This gets into the issue of modifying the concept of a utility's franchise. Sales by QF's to end-users represent a substantial departure from the underlying concepts of public utility regulation. It opens the door to shifting benefits to particular customers, cream skimming and shifting embedded costs to the utility's remaining ratepayers.

Notwithstanding this possibility, there may be specific wheeling proposals that (1) improve the overall efficiency of the utility system, (2) proposals which result in costs being shifted from some utility customers to others, or (3) proposals which do both. Useful questions to distinguish among proposals include whether beneficial physical changes in the generation and transmission of power will occur and whether the rates of customers who do not wheel will be increased as a result of the proposal.

F. A Charge To Leave or Return to a Utility's System

It may be to the advantage of an individual customer to shop for lower electric rates. It lowers the cost of the customer's products and makes it more competitive in the

marketplace. However, by modifying the utility franchise concept, the customer would be engaging in cream skimming and shifting embedded costs to the utility's remaining ratepayers. There are several ways to prevent injury to ratepayers caused by these practices. First, if in the future a customer wishes to return to the utility's system, a reconnection charge might be assessed to pay for the addition of new capacity and to shoulder some of the past burden of amortized abandonment costs, etc. Second, a charge could be assessed as a condition of leaving the utility's system. Third, wheeling rates could be charged to compensate other ratepayers for losses.

G. Back-up Power and Its Pricing

As a general matter, customers that obtain power from other specific generating sources will require back-up power in the event their supply is off-line. The pricing of the back-up power could include certain costs associated with the amortization of abandoned plants and other fixed costs.

H. Competition/Deregulation

Two arguments which were once advanced to support the case in favor of a monopoly were (1) that competition would require each firm to build its own distribution system and (2) that there were economies of scale in generating electricity.

The former argument continues to be as true today as it has ever been. Building a second set of distribution lines would be expensive and economically wasteful, and an eyesore as well. The generation argument carries less weight today than it did twenty to thirty years ago. Utilities today face an array of power purchase options which compete with one another and with the option of new utility-constructed generation stations.

The utility industry has always had competition on some levels and is presently becoming increasingly competitive. Historically, electricity has competed at the end use level. For many purposes, such as water and space heat and cooking, electricity competes with other fuels, appliance efficiency and conservation. Proposals for competition at the end-user level are beginning to appear. The federal General Services Administration has proposed that major federal installations should solicit bids from electricity suppliers. A CMP customer, Airco Industrial Gases, which has a plant in Kittery, is interested in buying power directly from Hydro Quebec over PSNH's transmission lines. These and other proposals are evaluated by the Commission as they arise.

#### I. Legal Issues

The discussion of the legal issues with respect to power transmission and wheeling, and Canadian purchases may be summarized as follows:

1. Transmission and Sale of a Utility's Power.

Wheeling issues traditionally arise in the context of a request for wheeling by an electric utility over the transmission system of a second electric utility for sales of energy from the first utility to a third electric utility. The PUC's explicit statutory jurisdiction over this area is found in newly enacted 35 M.R.S.A. §2330(3) and in limited emergency situations under 35 M.R.S.A. §2304 and, possibly, in situations arising under §256. The commission also may exercise jurisdiction over these activities pursuant to its general authority over utility acts and practices under 35 M.R.S.A. §294 and its general ratemaking authority. Wheeling by an electric utility to an end-user in another electric utility's service territory would constitute provision of utility service in that territory, requiring Commission approval under §2301-02.

2. Transmission and Sale of a Non-Utility's Power.

The issue of wheeling being provided for non-utilities (e.g., small power producers, cogenerators, qualifying facilities, and other independent power producers) is relatively new. However, it seems that a utility with transmission facilities owes basically the same duties and obligations with respect to access and rates to a independent power producer as it does to a utility. In this area, the Legislature has provided the Commission with limited explicit

jurisdiction in the area of wheeling power produced by industrial enterprises to affiliated end-users or to any utility.

35 M.R.S.A. §2330. A non-utility independent power producer which wishes to supply power to a customer which is in the service territory of a Maine electric utility would appear to require PUC approval under 35 M.R.S.A. §2301-02. In addition, it may be argued that in certain circumstances an independent power producer which makes such sales becomes a public utility subject to PUC jurisdiction. The law currently explicitly provides that small power producers which sell to utilities are not public utilities, 35 M.R.S.A. §2324. However, this exemption from public utility status might be read to apply solely with respect to sales by such small power producers or cogenerators to the utility (see 35 M.R.S.A. §2325), the Legislature being silent with respect to sales by such producers to end-users. Whether a sale to an end-user causes the small power producer to be a public utility is largely a question of fact, based upon an analysis of all the evidence. However, the legislative policy behind granting utility monopoly franchises would support the position that such sales to end-users should be subject to Commission approval under 35 M.R.S.A. §2301-02, regardless of whether the seller is or is not a public utility.

3. Transmission and Sale of Canadian Power.

The purchases of Canadian Power by end-users raise the same issues of wheeling, protection of monopoly franchises, and the public utility status of the Canadian producer, as are raised by sales by utilities and independent producers, as-discussed in paragraphs 1 and 2, above.

The purchase of Canadian power by Maine electric utilities is subject to various aspects of PUC jurisdiction. The construction of a line and the matter of assuring reasonable access to the line are subject to PUC jurisdiction under 35 M.R.S.A. §13-A. Utility purchases of Canadian power and the amount of such purchases are subject to PUC approval under 35 M.R.S.A. §13-B. In addition, the PUC has general jurisdiction and ratesetting power to foster prudent utility practices with respect to Canadian power purchases.

4. The State of Maine.

The State of Maine possesses limited authority to purchase and resell foreign power under 35 M.R.S.A. §2328. The practicality of this legislation is limited by both technical/economic limitations and constitutional restraints.

5. Federal Preemption.

The FERC has exercised federal preemptive authority over wheeling rates. However, the FERC's authority over provision of wheeling and access to transmission systems appears limited. This area remains largely subject to state jurisdiction, at least with respect to intrastate transactions.

6. Anti-Trust Implications.

Although the case law is sparse, the unjust refusal of a utility which has a monopoly transmission system to provide access to the system or reasonable charges for such access may be in violation of federal and state anti-trust laws.

All of the legal discussion and conclusions are preliminary in nature, the resolution of a particular case being dependent upon the application of the law to a specific set of facts. Most issues have not yet arisen in the context of litigation and await future resolution by the Commission and the courts.

APPENDIX H

Questions for the Record on the PUC Wheeling Report from Rep. Herbert E. Clark (Memo Nov. 12th), and Responses from the PUC staff (Elizabeth Paine, R. Darling and J. Donahue (Memo Nov. 13th)

(general) (1) Question: What is the total generating capacity in Maine?

Response: In-State Electric Generation Capacity Excluding Self-Generation and EMEC & KLP

Wyman 1,2,3,	213.5 MW
Wyman 4	619.3
Maine Yankee	850.0
Mason Station	146.5
Graham 3,4,5	59.7
Hydro	332.6
Cape Gas Turbine	35.1
Other oil	59.9

SPPF

CMP	97.0
MPS	17.6
BHE	19.6
Total 1985/1986	2450.9 MW

SPPF

Ultrapower(12/86)	49.0
Fairfield(87/88)	30.0
PERC(1988)	20.0
Peat Products(1988)	23.0
CMP(1987/88)	67.0
CMP(1988/89)	84.0
Total 1988/1989	2723.9 MW

NOTES ADDED:

- 50% of Maine Yankee is owned by Maine utilities
- 70.82% of Wyman #4 is owned by Maine utilities
- Tinker Dam (34 MW) is actually located in Canada, but owned by MPS. It is connected to MPS by a 69 KV tie-line which also can bring in power from NBEP
- EMEC is Eastern Maine Electric Cooperative
- KLP is Kennebunk Light & Power
- SPPF is Small Power Production Facilities

Energy Purchases

	<u>CMP</u>		<u>BHE</u>		<u>MPS</u>	
	<u>1/1/86-7/1/86</u>		<u>1/1/86-9/1/86</u>		<u>1/1/86-9/1/86</u>	
Hydro	900.5	GWH	146.6	GWH	104.0	GWH
Wyman	856.4		102.8		41.2	
Other Fossil	1.9		41.2		-	
Millstone	42.6		-		-	
Maine Yankee	1120.7		263.2		203.5	
Other Nuclear	90.0		-		-	
Net NEPEX	9.0		28.8		-	
NBEPIC	600.0	est.	187.5		112.0	
Other Purchases	606.3	est.	173.3		-	
SPPF	162.6		72.5	est.	7.7	
Net	<u>4390.0</u>	GWH	<u>1015.9</u>	GWH	<u>468.4</u>	GWH

Capacity

Hydro	305.0	MW	34.5	MW	36.3	MW *
Wyman	590.0		52.0		20.7	
Other	139.0		39.0		35.3	
Millstone	29.0		-		-	
Maine Yankee	320.0		59.0		45.0	
Other Nuclear	54.0		-		-	
SPPF	97.0		15.0		22.0	est.
Other Purchases	96.0		65.0		-	
NB Power	100.0		30.0		-	
Total	<u>1730.0</u>	MW	<u>294.5</u>	est.MW	<u>159.3</u>	est.MW

\*(34 MW - Tinker Dam)

(2) Question: What is the peak demand in Maine?

Response: Peak demand for the three major utilities in January, 1986 was 1832.4 MW as follows:

CMP	1453.4	MW
BHE	254.5	MW
MPS	124.5	MW
Total	<u>1832.4</u>	MW*

\*Excludes all other electric utilities in Maine. (NOTE added: The state total demand would be at least 20 MW larger to account for the small consumer-owned utilities. Only 2 of these have any generation capability (EMEC and KLP) but even there it is insufficient to meet their own demand.)

(3) Question: Is it correct that 700 Megawatts is available from Canadian imports via MEPCO? Should that 700 be effectively augmented by MPS share of Maine Yankee? Is it correct that Generation Minus Demand is available for export?

Response: A net of 700 MW is available for Canadian imports via MEPCO. The net figure is augmented by MPS share of Maine Yankee (45 MW) and Wyman #4 (21 MW)\*.

Currently, 225 MW is under contract from New Brunswick to Boston Edison, MMWEC, and Commonwealth Electric. 200 MW is under contract to CMP and 30 MW is under contract to BHE. 30 MW from Fairfield Energy Venture to CMP is also under contract. 200 MW of the line is used by CMP for spot energy purchases from New Brunswick, leaving about 81 MW of capacity for other purchases.

With an 1832 MW Peak demand, the 3 largest Maine utilities need 2291 MW of capacity at 20% reserve margin. Present resources in the State exceed that amount by about 150 MW.

It is correct that in-state generation minus demand is available for export. However, care must be taken as Maine Yankee and Wyman #4 are partially owned by out-of-state utilities and MPS has a generating facility in Canada.

\*(NOTE Added) The total is effectively 766MW

(p. 2) Question: If systems above 69KV are considered high voltage transmission, as contrasted with distribution, lines then should 35 MRSA §§13-A and 13-B use that as a cutoff instead of 100KV?

Response: Footnote number 32 on page 122 should be amended to read "69 KV and below." Since there are no transmission lines between 69 KV and 100 KV in Maine, we do not see a need to amend 35 MRSA §§13-A and 13-B.

(p. 6) Question: Who owns the two 345KV transmission lines that connect Maine to the South?

Response: CMP owns the lines to the New Hampshire border.

(p. 7) Question: What is the percentage ownership of MEPCO?

Response:

MEPCO ownership is as follows:	
CMP	78.14%
BHE	14.19%
MPS	7.49%
Woodland Wtr. & Electric	.18%
Total	

(p. 9) Question: The report identifies the problems caused by bottlenecks between Maine and Southern New England. How can Maine work to alleviate them? Are the lost opportunity costs for NEPOOL great enough for NEPOOL to make the investment to increase the transmission capacity? What is the relation between Seabrook and solving the bottleneck problem?

Response: Maine can work through existing channels to alleviate bottlenecks. Such channels include CMP and BHE representatives on various NEPOOL committees, Maine participation in the New England Governor's Conference matters and Commission participation in the New England Conference of Public Utility Commissioners. If a clear case can be shown that alleviation of a bottleneck will result in cost savings to New England ratepayers, intervention in Federal Energy Regulatory Commission proceedings related to NEPOOL can also be done. Contested proceedings at FERC can take years to process. The Maine Congressional delegation may be able to try to get federal legislation passed. The bottom line is that there are a variety of avenues on which to proceed, mostly in the persuasive vein. If it is not cost beneficial to alleviate the bottlenecks, persuasion will not be successful. There are also layers of political problems to overcome, most notably with New Hampshire.

At this time the Commission is not aware of the cost/benefits and lost opportunity costs associated with alleviating all of the bottlenecks.

(p. 12) Question: Please describe the 2nd transmission tie to New Brunswick which is under study.

Response: Status of a Second Tie-Line to New Brunswick. A second 345 KV tie-line to New Brunswick has been investigated by both NEPOOL for pool purposes and by the Maine utilities for internal needs. The investigations are still at a preliminary level in both cases and both are "on hold" pending further studies of potential ties to Hydro-Quebec. The scope and focus of the NEPOOL study are oriented toward meeting New England-wide power needs while the Maine Utilities' study focuses primarily on Maine's needs with secondary emphasis on meeting needs outside the State.

The preliminary NEPOOL analysis indicates that a line running essentially from Pt. Lepreau through Orrington and Maxcy's to Surowiec with a new line from Buxton, ME and Deerfield, ME to a new substation between Newington, NH and Deerfield, NH would be the most likely choice from a Pool prospective. The line would have the capability to carry 700 MW but would probably be limited to about 500 MW by bottlenecks at the North-South Interface. NEPOOL's latest report on their studies of the line (dated 1/14/86) indicates that additional studies of the Scobie to Tewksbury line would be necessary. Such studies would determine if a Scobie-Tewksbury line would be necessitated by an additional tie to New Brunswick from either a reliability standpoint or because of economic considerations.

The studies done by the Maine utilities for their own purposes also show a line coming from Pt. Lepreau along a southerly route to Orrington and most likely as far as Maine Yankee. This would be a 345 KV line and would probably carry about 500 MW. The energy carried through this line would be used primarily by Maine utilities with excess energy being "exported" south only when Maine's need was fulfilled. The Maine utilities have not actively pursued the construction of a second line and are now concentrating their resources on studying the technical and economic ramifications of a tie to Hydro Quebec.

In summary, both NEPOOL and the Maine utilities have done preliminary studies on a second transmission line to New Brunswick. Without reinforcements in the Maine--New Hampshire interface and the North--South interface, transfer of power out of Maine could be a problem. The Maine utilities have identified the potential of such a line for their own benefit but are not currently actively pursuing that alternative, at least until studies of a potential tie with Hydro Quebec have been completed.

(p. 13) Question: How many Megawatts will the new Seabrook--Tewksbury line carry? When will it come on line?

Reponse: 500-950 MW under normal conditions (see PUC Figure 2). Seabrook I is an 1100 MW plant. The line is expected to be completed in late 1987.

(p. 23) Question: The report states that NEPOOL's wheeling rules impede the efficient operation of a regional transmission system. How do these rules affect Maine's transmission system and can they be modified?

Reponse: NEPOOL's wheeling rules are very complex. Note that the report says these rules may impede. As members of NEPOOL, CMP and BHE are required to wheel power for NEPOOL purposes. A meeting to explain how NEPOOL works can be arranged if you desire. CMP, BHE and the Commission are actively engaged in reviewing the various elements of the NEPOOL agreement with an eye towards trying to change those elements that unfairly penalize Maine utilities. However, CMP and BHE continue to believe that their membership in NEPOOL is an overall net benefit to their ratepayers. CMP and BHE collectively have less than a 10% vote in NEPOOL related matters. Many NEPOOL matters require an 80% vote to approve.

(p.33) With respect to Maine Public Service, they now:

import 20-25% of their energy from Tinker Dam NB, which they own.

-wheel 40-45% of their energy from their share of Maine Yankee, via MEPCO and New Brunswick.

-purchase 20-25% of their energy from New Brunswick Electric (NBEPC) on an economy basis.

Question: Where does the other 5-20% come from?

Response: The other 5-20% comes from Signal/Sherman Wyman #4, Loring Air Force Base and internal generation such as the Caribou plants.

Question: MPS believes the optimum reliance on NB for firm capacity should be 20-30%. Does Tinker Dam satisfy this, or do they have other plans?

Response: Tinker Dam is not part of MPS' 20-30% reliance.

See response to 2nd question on page 116.

(p. 35) Small power producers stated that Maine should rely on indigenous energy resources first because of the economic benefits for Maine, including jobs and taxes. The PUC report states that energy purchases should be from the cheapest feasible (and reliable) source.

Based on figures in the report, pages 31 and 35, for a 30 MW small power producer, producing 200,000 MWhr-yr., the savings could be as high as \$12 million annually, if the cost of power was 3.2 cents-kwh versus 9.4 cents-kwh. (also see page 50)

Question: What are the trade-offs for Maine to buy electricity from an in-state small power producer, vs. buying Canadian power?

Response: The first part of the question is addressed broadly in the (PUC) Report and deserves more in depth study (as alluded to in 2nd question on page 116).

(p. 37) Question: Suppose economical power is locked-in Maine because of the Scobie NH bottleneck. Will that increase power costs to Maine utilities, or just to those south of the bottleneck? (see page 13)

Response: If a cheaper power cannot flow south, power costs to Maine utilities could either be higher or lower depending on what the wheeling revenues were if the power could flow south and, of those revenues, on what amount is passed on to ratepayers. From a Maine utility standpoint, the bottleneck should act to reduce power costs if economical power is locked-in. If the economical power source is undeveloped, Maine utility power costs will be unchanged. However, Maine utility transmission revenues will be lower.

(p. 53) Question: What does the avoided cost table look like for BHE and MPS?

Response: The data is not available for MPS. BHE recently filed data showing its 15 year avoided cost levelized at 11.5% to be 5.26¢/kwh for the first 24 MW decrement and 4.19¢/kwh for the second 24 MW decrement.

(p. 60) Question: (PUC) Table 4 shows CMP rates going up by 3.4¢/KWH (about 50%) over the next 5 years. 1.1¢ (about 15%) is due to nuclear & small power. What is the rest due to?

Response: 1.1¢ or 32% of the increase is due to nuclear and small power. The other 4 to 5% per year is due to rising oil prices and general inflation.

(p. 64) Question: FERC has authority to determine the rates for wheeling electricity. We understand that applies to "transmission" lines, which are considered interstate, but not to "distribution" lines, which are considered intrastate. Is that correct? What is the cutoff point?

Response: Your understanding is correct. 69KV and below are considered to be distribution lines.

(p. 70) Question: Airco in Kittery is interested in purchasing electricity directly from Hydro Quebec and wheeling it in over the lines of Public Service of New Hampshire. Is there anything in the proposal which would benefit, or make up the loss to, CMP, their present supplier?

Response: There is nothing known to be in Airco's proposal for CMP.

(p. 73) Question: The report suggests that even if new small power producers were allowed to wheel, it would not be beneficial to allow existing ones to. Would such a scheme be equitable? constitutional?

Response: See legal analysis beginning on page 126 of the wheeling report. The question of equity is difficult to assess without an in-depth review of history. The question of constitutionality does not depend on whether discrimination exists, but on whether the discrimination is undue or unreasonable, i.e. are the differences in treatment made upon a rational basis which purports to advance a reasonable public purpose. Note that PURPA does not apply to existing (pre-1979) facilities.

(p. 87) Question: With the enactment of 35 MRSA §2330 is it clear that PUC can order wheeling to utilities? set the rates for such wheeling? Or is PUC's authority still dependent on the argument you make from §256?

Response: PUC's authority is not solely dependent on §256 argument. The authorities in §256 and §2330 may be redundant in part and cumulative in part. See (the questions referring to pages 122 and 123 above), for discussion of ratesetting authority.

(p. 88) Question: The current statute gives the PUC the authority to order wheeling, but does not give explicit authority to prohibit wheeling. Although the PUC can address unreasonable wheeling through its rate-setting powers, should the statute be clarified to allow the PUC to prohibit unreasonable wheeling?

Response: At this time, the PUC does not recommend legislation which would make explicit the PUC's power to prohibit wheeling, for two reasons. First, the PUC is of the opinion that presently it has adequate authority to protect the public from unreasonable wheeling by a Maine utility. 35 M.R.S.A. §296 authorizes the PUC to investigate any matter involving any utility and §294 authorizes the Commission to order a utility to cease an act or practice found to be unreasonable. Furthermore, the Commission's ratesetting powers include the authority to disallow costs associated with unreasonable wheeling (a utility's violation or disregard of the conditions in §2330 (2) would be evidence of unreasonable wheeling) and to encourage prudent utility decisions through the setting of revenue requirements and rate of return. If the wheeling is being provided for a utility, that utility may require approval under 35 M.R.S.A. §13-B. If the energy is being wheeled to an end-user in a Maine utility's service territory, the supplier may need approval to serve under 35 M.R.S.A. §2301-02. The combination of the above authorities and any reasonable inference that the enactment of 35 M.R.S.A. §2330 implies Commission authority to prohibit wheeling (Report, p. 89, fn. 13) would suggest that the Commission's authority in this area is adequate at this time. Second, the PUC is of the opinion that presently there does not exist a problem with respect to unreasonable wheeling by a Maine utility. Many of the wheeling scenarios discussed in the Report are still at the conceptual stage in Maine. If, as events progress, it becomes apparent that the Commission's existing authority is not adequate to protect the public from unreasonable wheeling, the Commission would support legislation to make its authority explicit. Recall, for example, that 35 M.R.S.A. §13-B was enacted when it became apparent that the Commission's existing authority was not adequate to protect the public from imprudency with respect to utility investment in major sources of power. The Commission does not believe that the evidence necessitates such legislation at this time. Finally, although the Commission is not recommending legislation at this time, it should not be inferred therefrom that the Commission would oppose such legislation if it were submitted.

(p. 89) Question: Should the statute be clarified to explicitly require PUC approval for wheeling of less than 3 years or on a line under 100KV? For wheeling by a foreign utility over Maine lines?

Response: The principal purpose of §13-B is to protect the customers of the utility purchasing wheeling capacity and not to regulate the utility providing the wheeling services. The 3 year and 100 KV limitations still appear to serve the principal purpose. Therefore, the PUC's position on additional explicit authority is similar to the response to (the previous question)).

(p. 91) Question: Why was it not unreasonable to charge a higher rate of return in the rates to high load factor industrial customers than from low load factor customers?

Response: A response to this question would require review and analysis of a rate case over 10 years old which is not warranted in light of the little time available, limited relevancy to the Report, and the mooted effect of Docket No. 86-2.

(p. 97) Question: What is the status of the PUC's proposal to modify their rules in Chapter 36 so that to be an "associate" in a cogeneration or small power production facility will require substantial participation.

Response: A proposed rule was on the agenda for deliberation on November 12, 1986.

(p. 97) Question: Why do you say 35 MRSA §2330 may expand the rights of non-utilities to wheel? Isn't it clear that it does expand those rights?

Response: The report speaks in terms of "may" because it can be argued that utilities already had a responsibility to provide reasonable wheeling opportunities by the antitrust laws and their obligations as utilities to provide reasonable services without undue or unreasonable discrimination.

(p. 98) Question: §2330 restricts wheeling to affiliated interests, but does not define the level of participation required to be an affiliate. However, §104(1)(A) requires a 10% participation, in a somewhat different context. Should there be a clear statutory definition?

Similarly, shouldn't there be a clear statutory definition of "industrial enterprise"?

Response: The definitions of affiliated interests and industrial enterprise are a function of what the legislature wants them to be. Affiliated interest in the context of 35 MRSA §104(1)(A) was to protect the public by providing a broad definition of affiliation, so that any person with a potential of controlling a utility would be an affiliate, subject to PUC review. For a publicly traded corporation, a 10% ownership can mean substantial control. In the context of wheeling, the utilities and the public may be better protected by limiting the special treatment in §2330(1) to allow only closely related businesses, e.g. 80% ownership. In federal tax law, closely related is 80% or more.

Industrial enterprise may be broadly construed to be any enterprise in any industry. One view is that all classes of customers should have the same legal rights and opportunities. A legislative intent to move in this direction probably underlies the change from the word manufacturing to industrial.

(p. 100) In reference to the regulation of sales to end-users, we understand that Qualifying Facilities (QF's) are definitely not utilities, but they are authorized to sell to end-users in special circumstances:

-A QF may transmit electricity through its private property for use of its associates.

-Industrial enterprises (whether QF's or not) may transmit or wheel electricity to affiliates in the state.

Question: If so, what is the meaning of the statement "If the seller is a non-utility, it appears that it is required to obtain PUC approval...to serve an unrelated customer..."? Do you believe the statute now permits sale of electricity from a non-utility or a QF to an end user other than an affiliate? Please explain. (see also p. xv)

Response: The Report states that the requirement for PUC approval under §§2301-02 to supply an end-user in the service territory of a Maine utility is not dependent on whether the supplier is a public utility. Thus, the statute permits sales by a non-utility or a QF to an end-user other than an affiliate when the PUC authorizes such sales under §§2301-02.

(p. 104 & 106) The discussion of pricing for a non-utility wheeling its power outside the service area seems inconclusive.

Question: Is there any way under state law that a wheeling order by PUC could be contingent on FERC approving a wheeling rate which is reasonable - as found by the Maine PUC? Otherwise, couldn't our ratepayers be trapped in an uneconomic situation? (also see p. 109)

Response: The question does suggest a reasonable contingency, otherwise ratepayers could be trapped. Such a contingency would seem to be within the contemplation of the conditions in §2330(2). In addition, imprudence by a utility which contributed to placing ratepayers in such a trap could be addressed in a rate case.

(p. 109) Question: §2330(3) gives the PUC authority to order wheeling to any utility, however FERC preempts state authority over interstate wheeling. Should §2330(3) be clarified, by restricting it to wheeling to electric utilities within the state?

Response: There is a credible argument that the Commerce Clause in the U.S. Constitution would preempt or severely limit the State's authority, through the PUC, to order wheeling to a utility outside the State under §2330(3). However, the PUC does not see any compelling reason to write into into statute our current assumptions as to what the effect of the Commerce Clause would be. In the first place, we cannot at this time anticipate all scenarios which might arise and which would be permissible and which would not be permissible under the Commerce Clause. In such cases, the better policy would be to leave the PUC unfettered by statutory limits intended to reflect the Commerce Clause and to allow the PUC and other parties to test the limits of the Commerce Clause in appropriate cases as they may arise. This policy of not tying the Commission's hands in areas of possible federal

preemption by state statute contributed to the deletion of references to federal preemption over wheeling rates in L.D. 2104 (predecessor to §2330) in the last session and to the deletion of the last sentence in 35 M.R.S.A. §212 by P.L. 1985, c. 481, Part A, Sec. 76.

(p. 112) Question: A certificate of convenience & necessity is required for a Maine utility to construct a new transmission line. PUC states in the report that they would include a provision for reasonable access in their findings for approval. Should this requirement be embodied in statute or is the PUC's present authority sufficient?

-The sponsors of LD 2104 went a step further and would have required a positive finding of reasonable access. Would PUC support that - for utilities? - for industrials? In natural gas, in 1982 an interstate pipeline was planned across Maine. A drop-off requirement was obtained by negotiation, not by statute. Would a statutory requirement be constitutional in the case of an interstate electric transmission?

Response: The Commission is of the opinion that it has sufficient authority under 35 M.R.S.A. §13-A to include the issue of reasonable access in its review of a utility's proposed construction of a transmission line and to condition its approval on reasonable access. The statute provides the Commission with considerable discretion on the issues which must be addressed in a §13-A proceeding. The petition for approval must contain all information which the Commission by rule may prescribe. The Commission's authority to investigate any matter with respect to a public utility under §296 and its authority to order reasonable acts and practices under §294 reinforce its authority under §13-B.

An argument might be made that mandatory in-state access to an interstate transmission line is preempted by the Commerce Clause. However, the State's interest in the approval of construction of a line in Maine by Maine utilities, and the intrastate "drop-off" of power on such a line, would appear to outweigh interstate commerce concerns. In any event, the Commerce Clause's effect would be unaffected by whether reasonable access is required to be considered by statute or by Commission implementation of §13-B.

While PUC would be willing to consider language requiring that reasonable access shall be considered in §13-A proceeding, it is conceived that language like that in L.D. 2104 would give preference to reasonable access over other important considerations in a §13-A proceeding. See L.D. 2104, §2, 2d ¶.

- (p. 116) Question: It is clear that PUC has authority to approve Canadian power purchases and - through ratemaking practices - to encourage them. Suppose a utility sets up a subsidiary to build and operate an interstate transmission line across Maine. Is it possible that this could be free from PUC regulation?

Response: The PUC would have approval authority over the setting up of the subsidiary under the Reorganization Statute (35 M.R.S.A. §104(3-A)). In granting the authority, conditions could be attached to give further regulatory oversight than statutes explicitly provide. A certificate of public convenience and necessity to construct the line could be required. Furthermore, an argument can be made that the transmission subsidiary itself is a public utility subject to PUC jurisdiction. (See Report, p. 112-113)

- (p. 116) Question: Some of the points debated in the PUC's report consider economics, jobs, imports, and other broad issues. The PUC has jurisdiction only over rate-setting. What is the best way to study these issues? What other agencies should be involved?

Response: The answer to this question lies mainly in the Legislature's hands. The Commission solicited the involvement of many State agencies in preparing the wheeling report. Only the Public Advocate's Office provided comments at the draft report stage. Clearly the State Planning Office, DEP, LURC, State Development Office, OER and Conservation should be part of an overall study. (P.S. PUC has jurisdiction over a lot more than only ratesetting.)

(p. 122,  
123, 124)

Question: The report notes that if a wheeling arrangement involves only a utility's distribution system (not the transmission system) it is likely FERC has no jurisdiction and states can set the rates. Would it be appropriate to enact legislation giving PUC specific statutory authority to regulate rates for wheeling intrastate over distribution lines only? In that case would the appropriate definition of distribution lines be "69KV or below"?

-Would it also be appropriate to give PUC specific statutory authority to regulate wheeling rates for REA cooperatives?

-for any governmental or quasi-governmental entity?

Response: The second paragraph of §2330 (§) may be interpreted to provide the Commission with explicit authority to set rates for wheeling where the parties involved in transactions governed by §2330(1) and §2330(3) fail to agree. Furthermore, the provision of transmission services over the distribution system may constitute public utility service as defined by 35 M.R.S.A. §15 (see Report, p. 112-3) which would require the filing of rates under §61. The commission would also have authority over such transactions under 35 M.R.S.A. §§296 and 294. With respect to the suggestion that legislation be enacted conferring explicit authority in this area, the Commission's response would be similar to its reponse to the question referring to page 88 above. With respect to the suggestion concerning the definition of distribution lines, see response to the question referring to page 2 above.

(p. 132) Question: The report finds that states may generally have authority to prohibit wheeling. But in the special case of a small power production facility, wouldn't such a prohibition be preempted because it is contrary to the federal policy in PURPA? (see also p. 129)

Response: As noted in footnote 39 on page 129 of the Report, a strong argument exists that such a prohibition would be preempted by the FPA. This footnote should be read to include the PURPA amendments to the FPA.

(p. 135) The report argues that PURPA Sec. 210 (16 USC §824a-3(e)(1)), which authorizes exemption of QF's from State & federal rate regulation, does not preempt state authority to mandate or prohibit retail sales by QF's.

Question: Do you believe PUC may set retail rates for QF's? Should the federal law be clarified on these points?

Response: Provided that sales at retail to an end-user makes the QF a public utility subject to PUC jurisdiction, including the setting of retail rates, we do not believe that such jurisdiction is preempted. See following paragraph.

Yes, the federal law should be clarified in a manner consistent with the Report's position. We have no estimate on the likelihood of the success of such a clarification effort.

(p. 139) Question: It appears uncertain whether or not a utility which refuses to wheel is in violation of the antitrust laws. Is there any way to get a clear reading on the situation?

Response: A clear reading would require either a judicial pronouncement in the context of antitrust litigation or a declaratory judgment action or a legislative pronouncement in the context of amending the antitrust statutes.

HW/elk/7465

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