

Montana Department of
ENVIRONMENTAL QUALITY

Montana Electricity Supply And Demand

Paul Cartwright
Presentation to Environmental Quality Council
12-10-01

The Basic Numbers

- 5,200 MW capacity
- 3,200 MW generation (average 1995-99)
- 1,800 aMW load (in 2000)

Caveats

Montana is part of an interconnected grid

Western load - 86,122 aMW

Montana load - ~1,700 aMW

California sales - 26,807 aMW

Montana sales - ~1,600 aMW

1999 data

Generation Facilities in Montana

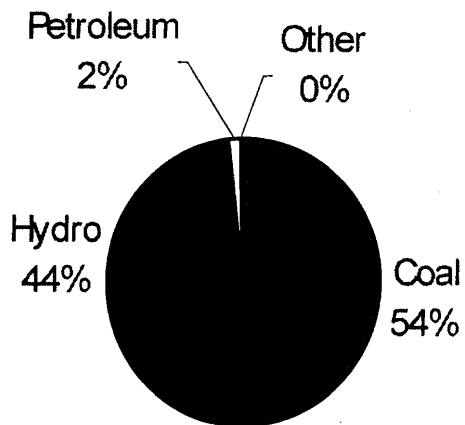
- 45 generating facilities in Montana
- Colstrip 1-4 - 1800 MW capability
- Libby Dam - 600 MW capability
- Several QFs with less than 100 kW

Table E1 has details

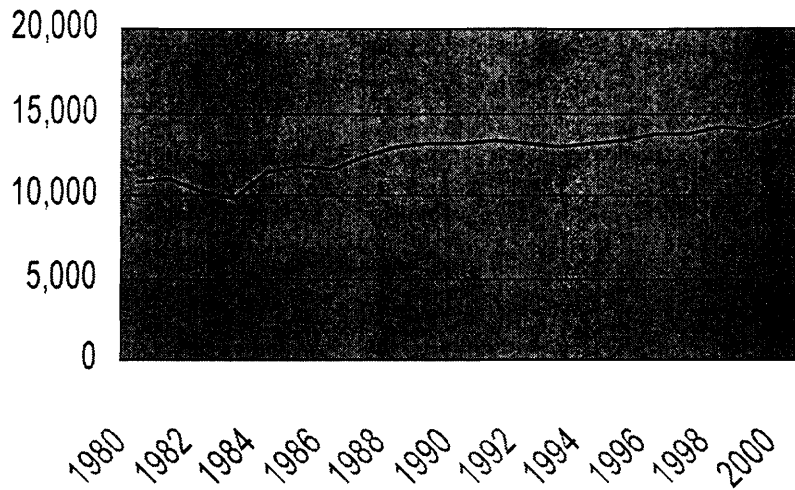
Generation by Company

	<u>aMW</u>
•PPL Montana	940
•Puget Sound Power & Light	509
•Avista	403
•Bonneville Power Administration	382
•Western Area Power Administration	323
•Portland General Electric	223
•Montana Power Company	169
•PacificCorp	114
•Yellowstone Energy Limited Partnership	47
•Other	68

Generation by Fuel



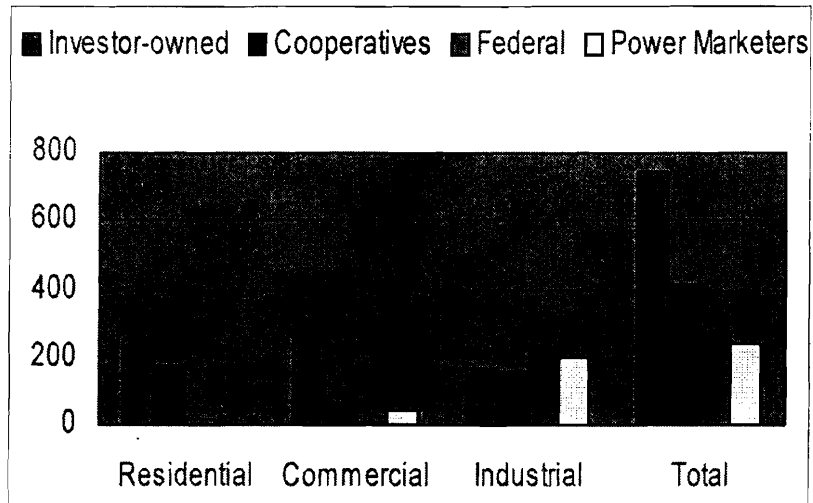
Annual Sales (MMWh)



Annual Sales (MMWh)



2000 Sales (aMW)



Large Industrial Loads (aMW)

ASARCO	8.7	Montana Resources	43.0
Ash Grove Cement	4.6	Montana Refining	3.4
Conoco Pipeline	20.0	Montana Tunnels	9.5
Conoco Refinery	27.0	Stillwater Mining	20.0
Golden Sunlight	10.0	Smurfit-Stone	52.0
Holnam	5.0	ExxonMobil	27.0
Louisiana Pacific	7.0	CFAC	342

New Generation

- Applied for interconnection study
 - Has contract with a purchaser
 - Applied for environmental permit
-

Requests for Interconnection Study

Anaconda	111 MW	Nov-01
Big Timber	0.065	Sep-01
Billings	100	Aug-01
Bowmans Corners	280	May-01
Broadview	500	Mar-01
Broadview	200	Jul-01
Broadview	700	Aug-01
Butte	100	Jun-01
Colstrip	500	Mar-01
Great Falls	45	Mar-01
Great Falls	125	Mar-01

Interconnection Study (cont.)

Great Falls	150 MW	Mar-01
Great Falls	8	May-01
Great Falls	280	May-01
Hardin	100	Apr-01
Hardin	100	Aug-01
Livingston	0.195	Apr-01
Silver Bow	500	Oct-00
Thompson Falls	12	May-01
Two Dot	0.065	Aug-01
Wheatland County	60-120	Apr-01

Signed contracts

- Northwestern - 240 MW (in 3 phases)
 - Rocky Mountain Power - 100 MW
 - Thompson River Cogen - 12.5 MW
 - Tiber Dam - 7.5 MW
 - MT Wind Harness - 150 MW
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Permit Applications

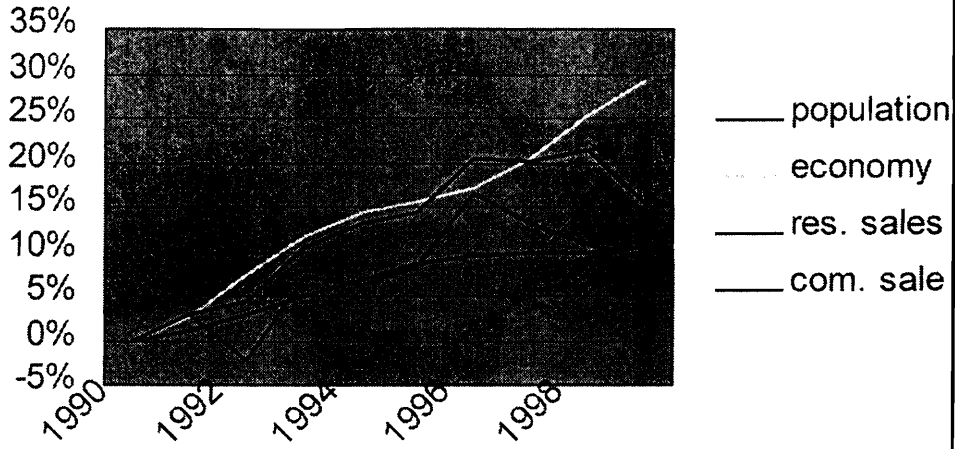
- Silver Bow
 - Thompson River Cogen
 - Montana First Megawatts
-

Forecasted Growth

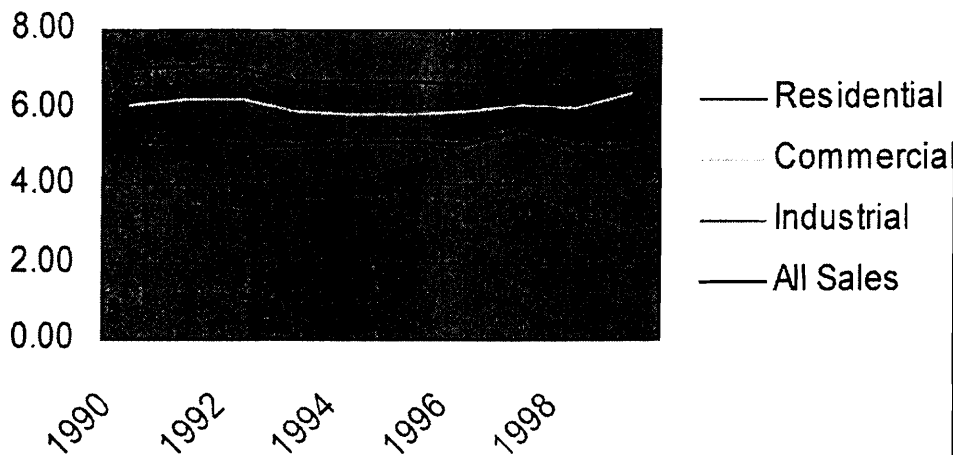
- There are no state-wide forecasts
 - MPC Tier II filing assumes:
 - 1 % growth
 - Loss of ASARCO, MRI and Golden Sunlight
 - Actual growth 1990-2000
 - Overall - 1.0%
 - Residential - 1.5%
 - Commercial - 3.4%
-

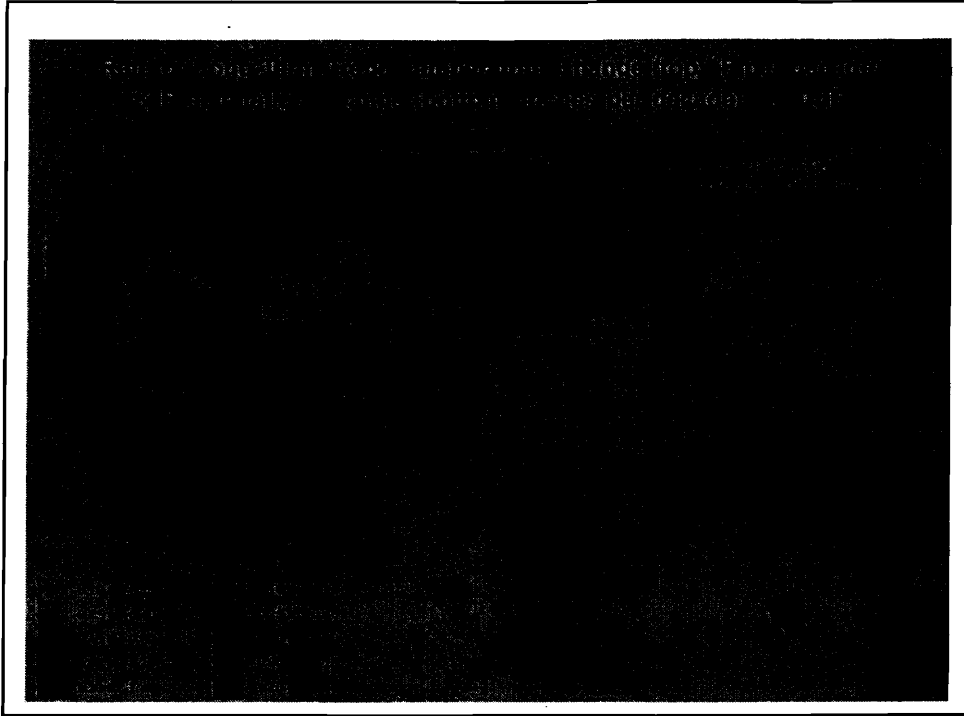
Rates of Growth

Percent Change, 1990-1999



Cost per kWh (1999 cents)





Increased Efficiency?

- State government programs
 - USBP Program (primarily MPC)
 - BPA-sponsored programs
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State Efficiency Programs

- State Buildings Energy Conservation Program
 - State Government Energy Monitoring
 - Rebuild America Grant
 - Energy Efficiency Through Building Commissioning Practices
 - State Energy Education Programs
 - Alternative Energy Loan Program
 - Low-Income Weatherization Program
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Building codes

- Residential code: 1993 CABO Model Energy Code
 - Commercial buildings: ASHRAE Standard 90.1 (1989 Version applies)
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Universal System Benefits Program

- Established to maintain energy efficiency, renewable energy and low-income assistance
 - Utilities' obligation in 2000 was \$13,607,55, or about 1.9% of total revenues.
 - About half the obligation was spent on investments that otherwise wouldn't have happened.
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MPC USBP Program

- Residential and commercial audits
 - Commercial lighting retrofits
 - Northwest Energy Alliance
 - Generation/education (primarily solar)
 - R&D/Infrastructure (wind)
 - Bill Assistance and Energy Share
 - Free weatherization
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BPA Programs

- Lighting Standard Offer - commercial lighting retrofit
 - IRLC - purchase of conservation agreements
 - CFL Coupon Program – reduced cost Compact Florescent Lights
 - Vending Mi\$er - reduction of energy use on beverage vending machines
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BPA Programs (cont.)

- Conservation & Renewable Discount – supports eligible coop programs
 - BacGen - Wastewater Treatment Program Pilot
 - Peak Load Management
 - Community Conservation Campaign
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Load Growth by 2010

- The 90's continue (2%) - 400 aMW
 - MPC Tier II (1%) - 30 aMW
 - Tier II - CFAC - -330 aMW
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