Sustainability Goal Setting and Waste Reduction at PNM Resources

Presented to New Mexico Recycling Coalition Conference
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Presentation Overview

- Importance of goal setting as the genesis of our recycling program development
  - Manage what you measure
  - Goals set intention
- Measuring wastes and recycling: challenges, solutions and lessons learned
- Where we are today and prospects for the future

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PNM's Continuous Commitment to Environmental Sustainability

- **Stewardship** a Core Value since 2001
- **Environmental Sustainability** Policy and Goals since 2003
- **Resource Efficiency** is one of PNM's Environmental Sustainability Strategies since 2005

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Our First Five-Year Environmental Sustainability Goals (2004-2008)

Generation portfolio will use 15 to 20% less fresh water per MWh than it did in 2002

Generating plants will emit 15% less NOX, 15% less SO2 and 7.5% less particulates than in 2002

Become a national leader in the promotion and provision of renewable resources

Implement plans to measure and reduce waste streams by 15% over 2002 levels by 2008

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What's our Baseline?

- No way to measure waste and recycling
- Hired consultant in 2005 to conduct waste audit
- Report estimated
  - 1,731 tons of solid waste
  - 898 tons of recyclables
  - 34% diversion rate
- Study established an estimated baseline for waste and recycling
- But what about measuring and improving based on actual data?
- PNM hired a Resource Efficiency Manager in 2007 to deal with waste and internal energy and water issues

Final Report:
Assessment of Waste Management Practices at

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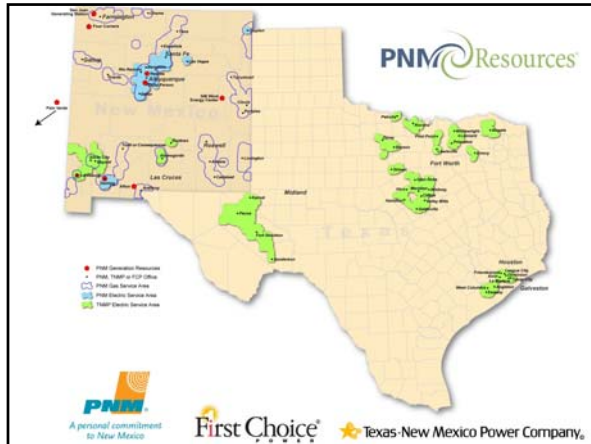May 18, 2006

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Major Recycling Challenges

- Dispersed geography
- Starting from scratch in Texas and many New Mexico offices
- Recycling in communities that lack recycling programs
- Moving materials to market without using more energy than recycling saves
- Lack of database to measure waste and recycling
- One fulltime employee
- How to create a reduce/re-use/recycle culture among our workers!

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Setting up a Recycling Program for a Geographically Dispersed Company

- Management support is key!
- Attract employee or team to champion recycling in each office
- Develop methods to
  - Track waste and recyclables
  - Move recyclables from rural offices to market
- Give employees a context for the importance of recycling—employee education
- Offer continual feedback about results

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Re-establishing Team Green

- Needed **dedicated employee** in each facility to champion recycling
- Started with old Team Green lists
- Recruited known green sympathizers
- Talked with local managers—in many cases Team Green positions were assigned

Photo from internal communications that highlight Team Green members and their recycling efforts.

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Tracking Waste and Recyclables

- Team Green Metric database Version 1
- Tracks waste (roll-offs and frontloads) and re-used and recycled materials
- Allows each Team Green member to enter facility-based metrics
- Reporting capability—not good!

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Moving Recyclables from Rural Areas to Market

- Use **integrated supplier** to backhaul recyclables on a space available basis
- Does not result in additional energy expenditure or cost
- Allows common recyclables and large items such as scrap metal hoppers and wood reels to move through the system

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Providing Employees Context is Critical to Creating Recycling Culture

- Education provides a context for the importance of individual action
- Program must provide employees with opportunity to contribute to larger sustainability goals

Photo from corporate Junk Mail Reduction campaign as part of Earth Day 2008 promotion

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Continuous Employee Feedback!

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2004-2008 Goal: Not a Perfect System

- Program quality depends upon Team Green member motivation
- No accountability at the facility manager level
- Not all facilities have fully participated and some not at all
- Clunky database
- Economic downturn in 2008 resulting in layoffs
- Resource Efficiency Manager's time curtailed

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But We Made the 2004-2008 Waste Goal!

- PNM achieved the waste reduction goal
- Waste is down by 20.4%
- Recycling is up by 222%
- Diversion rate is estimated at 59.1% (when C&D are removed)

Municipal wastes recycling rates	2005 (est)	2006 (est)	2007	2008
% recycled	34.11%	34.11%	74.04%	80.10%
generated(tons)	2,627.00	2,627.00	5,223.40	6,924.00
recycled (tons)	896.00	896.00	3,867.40	5,546.00
disposed (tons)	1,731.00	1,731.00	1,356.00	1,378.00

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New 3-year Environmental Sustainability Goals Build on Earlier Successes

Meet or exceed NM Renewable Portfolio Standard while attaining rate recovery and minimizing customer risk

Meet or exceed PNM's IRP and TNMP's PUCT-required energy efficiency goals while attaining rate recovery

Establish 2011 goals for NOx, SO2, Hg, and particulates consistent with Consent Decree limits at San Juan and consistent with 3 years past performance at Four Corners which is below permit limits

Facilities will identify significant waste streams and at least 75% will implement plans to reduce at least one of these waste streams by 15% below 2009 levels while maintaining current recycling programs

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Energy Efficiency at PNM

Residential Programs
1. Home Lighting Discounts
2. Refrigerator Recycling Rebates
3. CFL Distribution
4. PNM Power Saver

Business Programs
1. New Construction
2. Retrofit Rebates
3. PNM Quick Saver
4. Refrigerator Recycling Rebates
5. PNM Peak Saver
6. PNM Power Saver
7. Energy Star Homes
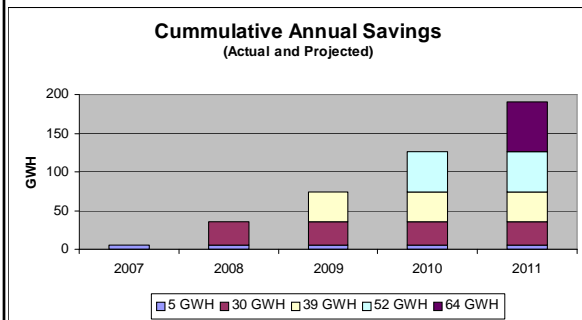

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JACO Refrigerator Recycling

- Recycled to date
  - 2008 -   8,537
  - 2009 -   7,001
  - 2010 -   3,099 (year to date)
  - Total   18,637
- Recycle 95% of each unit
- Over 3,500 tons of metal, glass, plastic, freon, and oil

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Energy Efficiency Results to Date

Cummulative Annual Savings
(Actual and Projected)

Legend: 5 GWH, 30 GWH, 39 GWH, 52 GWH, 64 GWH
Y-axis: GWH (0, 50, 100, 150, 200)
X-axis: 2007, 2008, 2009, 2010, 2011

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3-Year Waste Goal (2009-11)

- Identifies significant wastes and targets at least one for reduce, re-use or recycle
- Emphasizes maintenance of existing programs
- 75% goal acknowledges facilities who have done all they can
- Accompanied by a major database rework to make data entry much easier and automate reporting
- Executive Sponsor!

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Defining Waste Goals

- Executive Sponsor directed each facility manager to
  - Conduct a waste audit, identify 6 significant waste streams, and target at least 1 for reduction
  - Include waste goal in PMDS
- Participating facilities include 27 construction centers, 7 offices, and 3 generation facilities
- Most facilities chose cardboard, wood, or paper
- 3 facilities chose to reduce paper use, paper plates and plastic cutlery, and electricity
- Program progress is reported quarterly to senior management and the board of directors

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Partnering with Supply Chain

- Investment Recovery Program
  - Policy gives Supply Chain exclusive authority to dispose of company assets
  - Includes IT hardware, office furniture, supplies, transformers, oils, scrap metal, wood reels, equipment, etc
  - Ensures disposal in an environmentally responsible manner
  - Ensures that disposal is documented in Team Green metric database
- Green Purchase Program
  - Encourages Sourcing Analyst to consider total life cycle cost in all purchasing decisions
  - Involves Subject Matter experts from Environmental Services in certain purchasing decisions

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In-House Database

- Improved version of older DB (web-based, SQL .net)
- Live remote training for all facilities
- Supported by IT (not a "rogue" application anymore)

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Innovative PNM Recycling Programs

- Conveyor belts from San Juan power plant to rodeo flooring
- Wood poles to fence rails and trailer beds in north and central Texas
- Composting chipped trees from vegetation management
- Furniture to Goodwill and other non-profits

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2009 Annual Report

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2009 Five-Year Results

Enterprise-Level Recycling Efforts
Diversion rates* and tons of materials recycled

	34% Diverted (896 tons)	34% Diverted (896 tons)	74% Diverted (3,867 tons)	80% Diverted (5,546 tons)	78% Diverted (5,302 tons)

Legend: ■ Recycled ■ Disposed

2005	2006	2007	2008	2009
2,627 tons generated	2,627 tons generated	5,223 tons generated	6,924 tons generated	6,823 tons generated

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2009 What We Recycled

0% Electronic Waste (2 tons)

0% Plastics (2 tons)

4% Misc. Materials (204 tons)

62% Metals (3,280 tons)

30% Wood Materials (1,591 tons)

3% Paper Goods (155 tons)

1% Office Furniture (69 tons)

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2009 Our Construction Centers

Wastes: Significant waste streams for our construction facilities are heavy items such as wood (utility poles, reels and pallets) and cardboard.

Opportunities: Because of the higher weight, construction centers tend to have the highest diversion rate of all facility types.

Constraints: Construction centers can be located in rural areas that lack access to recycling vendors and markets, which can create challenges for expanded recycling efforts.

FACILITY	RECYCLED (tons)	DISPOSED (tons)	DIVERSION RATE	NO. RECYCLED MATERIALS
Nocona Construction Center	18.00	12.19	59.62%	1
Ruidoso Construction Center	5.03	3.68	57.76%	12
Clifton and Smaller Facilities*	121.17	120.43	50.15%	6
Deming Service Center	5.28	4.59	53.49%	5
Olney Construction Center	13.50	12.64	51.64%	1
Albuquerque Service Center	182.62	194.78	48.39%	10
Lewisville Construction Center	34.58	49.70	41.03%	4
Alamogordo Construction Center	9.46	20.16	31.93%	8
Silver City Construction Center	4.53	20.06	18.41%	4
Santa Fe Electric Service Center	9.37	41.58	18.39%	5
West Columbia Construction Center	8.22	46.87	14.93%	5
Texas City Meter Shop	1.74	13.65	11.29%	4
Friendswood Construction Center	18.90	172.90	9.86%	7

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2009 Our Construction Centers, cont.

FACILITY	RECYCLED (tons)	DISPOSED (tons)	DIVERSION RATE	NO. RECYCLED MATERIALS
Kermit Construction Center	0.01	4.08	0.23%	1
Pecos Construction Center	0.06	47.53	0.12%	4
Texas City Gulf Coast Regional	0.28	256.26	0.11%	4
Las Vegas Service Center	0.32	0.00	0.00%	1
Bogata Construction Center	0.00	16.80	0.00%	0
Fort Stockton Construction Center	0.00	13.66	0.00%	0
Leonard Construction Center	0.00	32.96	0.00%	0
Lewisville Meter Shop	0.00	22.19	0.00%	0
Pilot Point Construction Center	0.00	6.37	0.00%	0

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PNMR Takes Pride in Recycling

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Program Summary

- **PNM used quantitative goals to establish a strong waste reduction program**
  - Achieved 2003-2008 waste reduction goal
  - Working on a 2009-2011 goal
- **New waste goal establishes accountability**
  - Supported by senior management
  - Facility managers responsible in their PMDS
- **No fulltime employees—not possible without strong Team Green and management support**
- **Reporting highlights facility-level performance and inspires improvement**
- **Program is achieving substantial increases in diversion through goal-setting process**

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Thanks!

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