



TRI-STATE

THE POWER BEHIND YOUR
LOCAL ELECTRIC CO-OP

A Touchstone Energy Cooperative



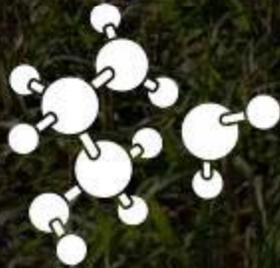
Cimarron Solar Project

Rhonda Mitchell

Senior Government Relations Advisor

Radioactive & Hazardous Materials Committee

August 15, 2011



NEW TECHNOLOGY



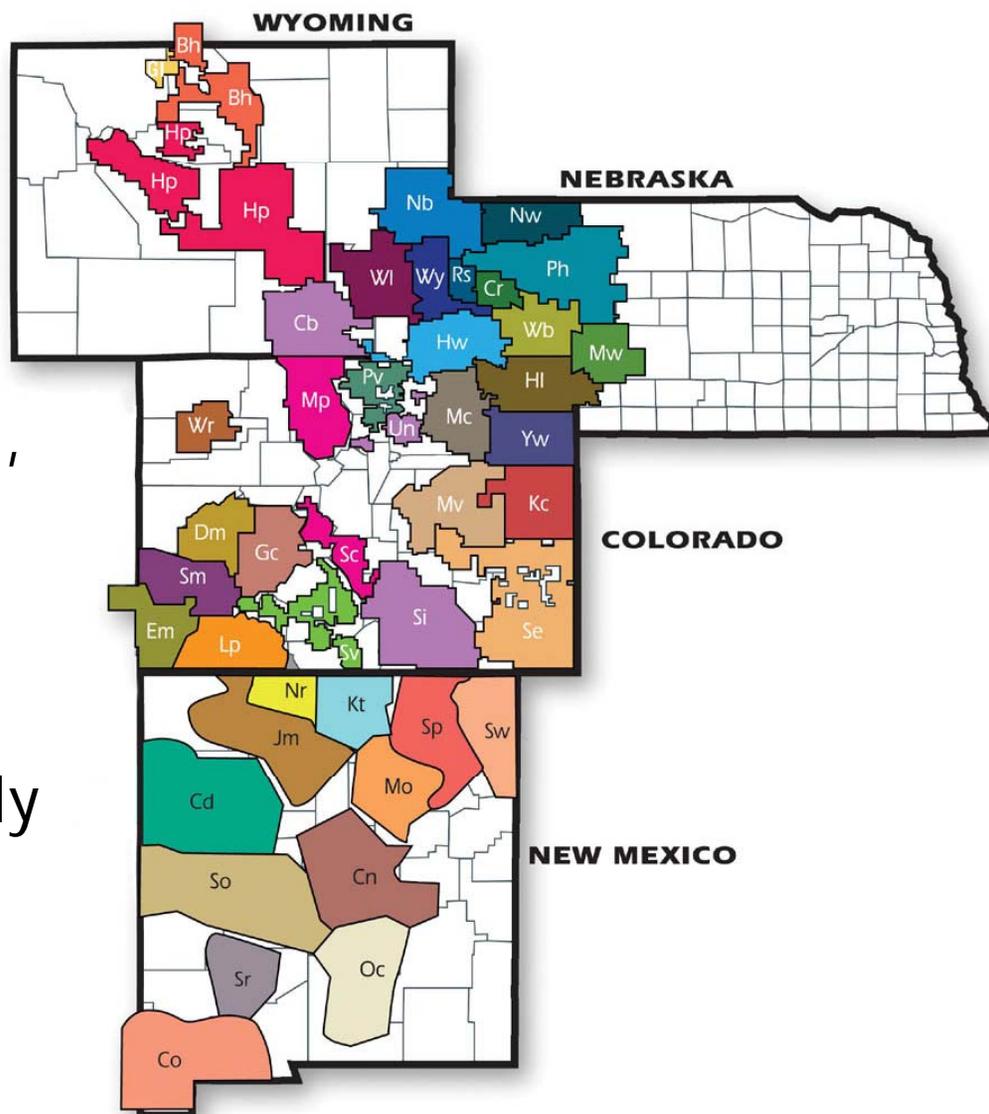
RENEWABLE ENERGY



ENERGY EFFICIENCY

Tri-State Overview

Tri-State is a not-for-profit, wholesale power supplier owned by 44 electric cooperatives and public power districts serving a population of approximately 1.5 million people.





Tri-State's mission is to provide reliable, cost-based electric energy to our member systems consistent with cooperative principles



Tri-State At a Glance

- Annual operating revenue \$1.2 billion
- Assets \$3.8 billion
- Average wholesale rate 6.5 cents/kilowatt-hour
- Member peak demand 2,568 megawatts
- Member service territory 200,000 square miles
- Employees 1,200



Tri-State Resources

- 1,868 MW Coal-fired Generation
- 915 MW Gas/Oil-fired Generation

- 600 MW Federal Hydro Power Purchase
- 450 MW Other Purchases
- 30 MW Solar PV Purchase
- 51 MW Wind Purchase

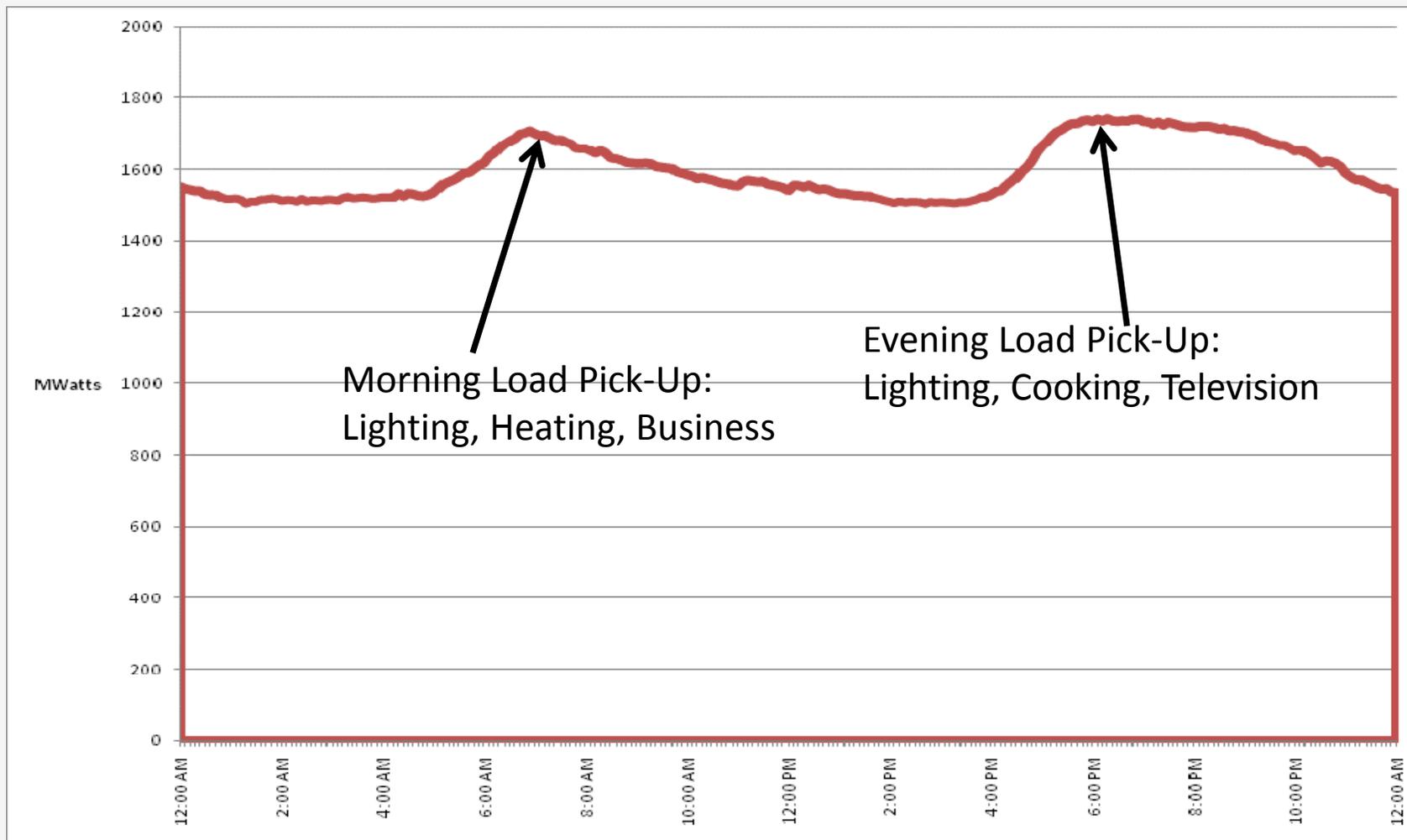
- 5,177 Miles of Transmission Line



Typical Daily Consumption Pattern

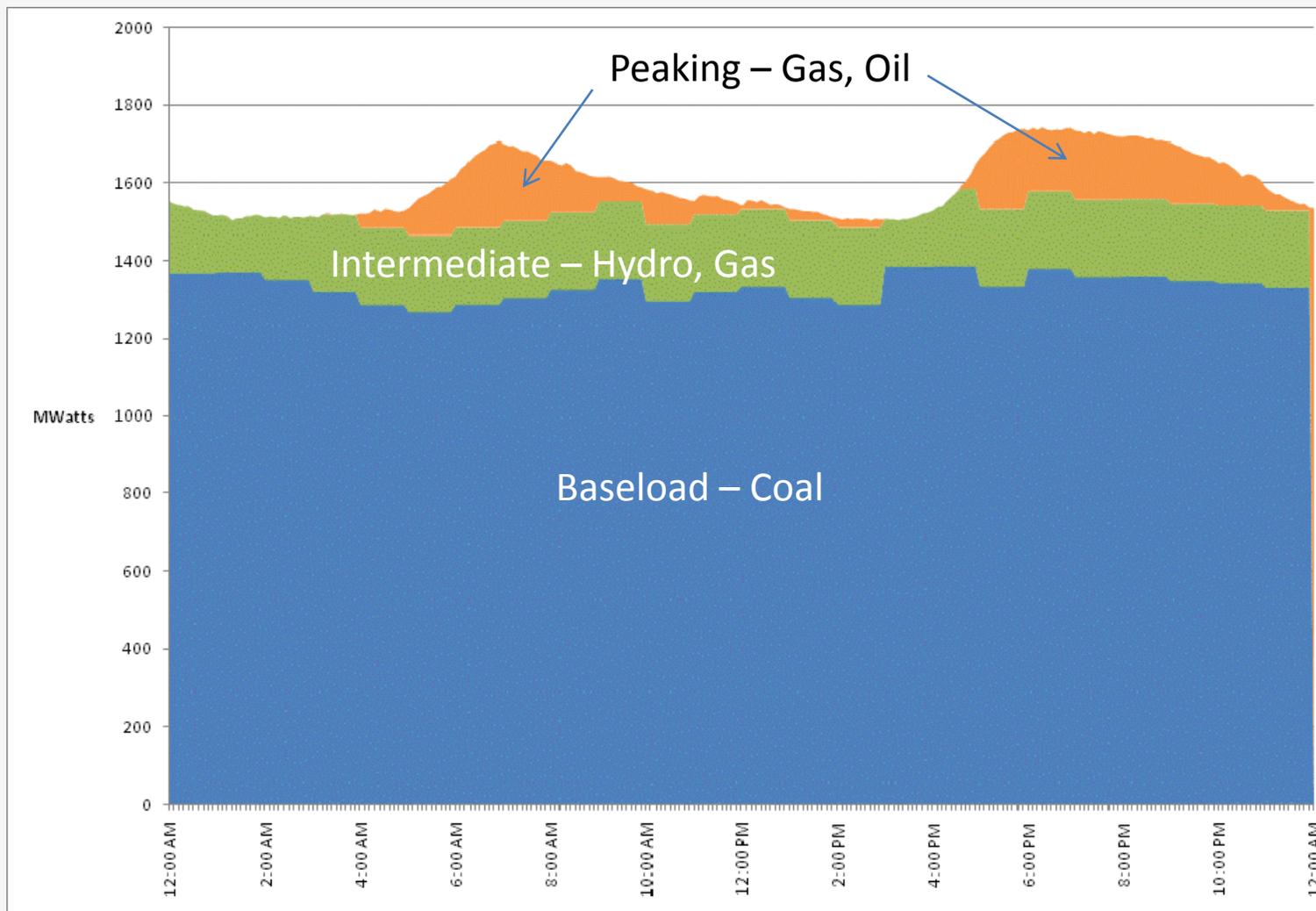
AKA "Load"

Tri-State: December 10, 2009





Typical Daily Generation Pattern





RPS Mandates

- Applies to members in Colorado and New Mexico
- 5% renewable energy by 2015
- 10% renewable energy by 2020
- Socialization of cost
- Existing Renewables
 - 584 MW of WAPA (doesn't count)
 - 11 MW Small PPAs (hydro/bio)

Tri-State Policy 115 - Member Generation

- Allows members to provide own generation resources up to 5% of their total annual load requirements
 - Distributed generation (DG) or renewable generation
- Tri-State's Goals:
 - Facilitate members' desire for local projects
 - No rate pressure on Tri-State's Class A rate - up or down
 - Compatible with any rate design
 - RECs generally used for RPS compliance
- Results to Date:
 - 10 projects totaling about 11 MW
 - Small hydro, heat recovery and solar



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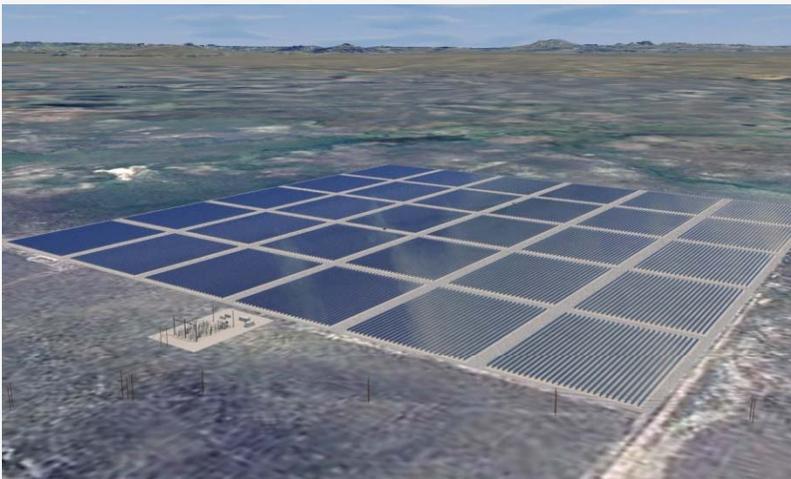
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Cimarron Solar

- 30 megawatts
- 500,000 thin film panels
- 250 acres near Springer, N.M.
- 25-year PPA
- Online Nov., 2010
- Justification



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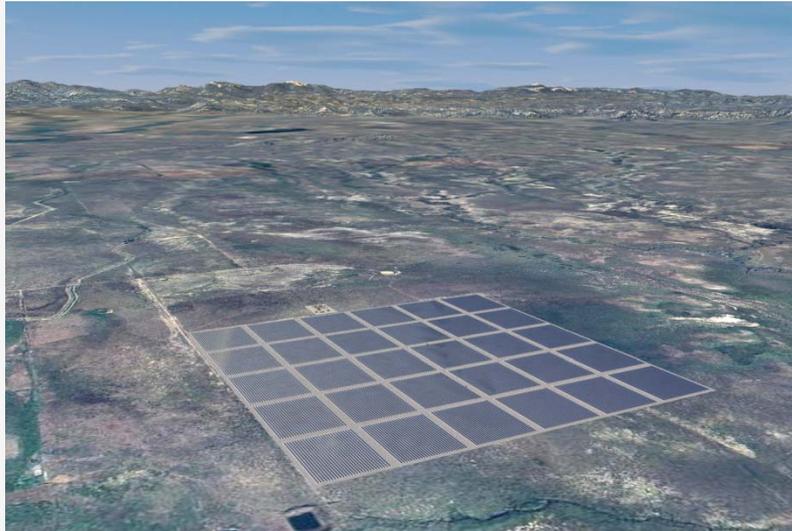
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Ideal Timing

- Great solar resource
- Minimal transmission cost
- Federal and state incentives
- RPS multiplier (3x RECs)
- Low-cost solar technology
- Landowner involvement
- Favorable interest rates
- Solid partner in First Solar
- Integration / Experience
- No transmission required



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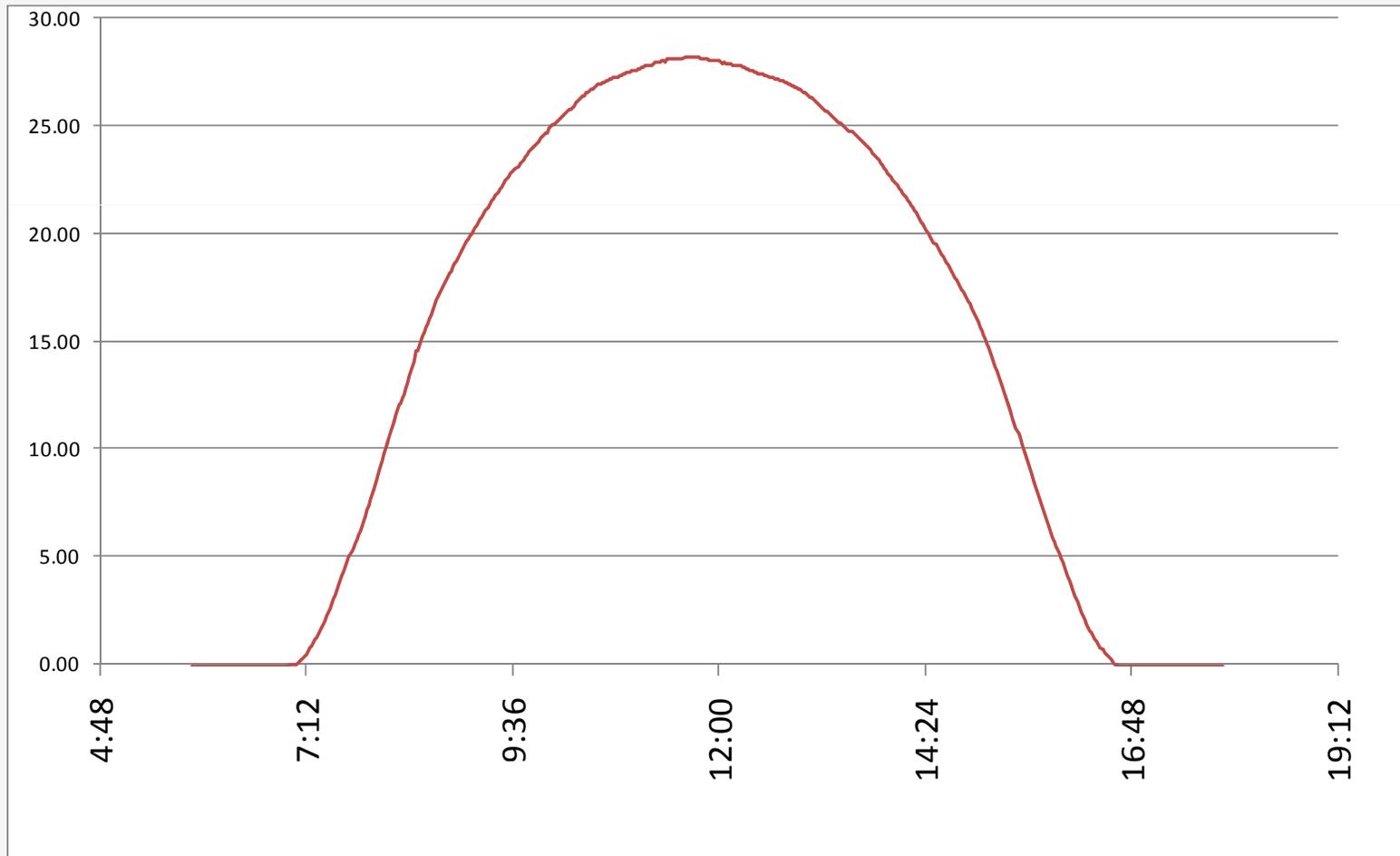


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ENERGY EFFICIENCY

On a Clear Day





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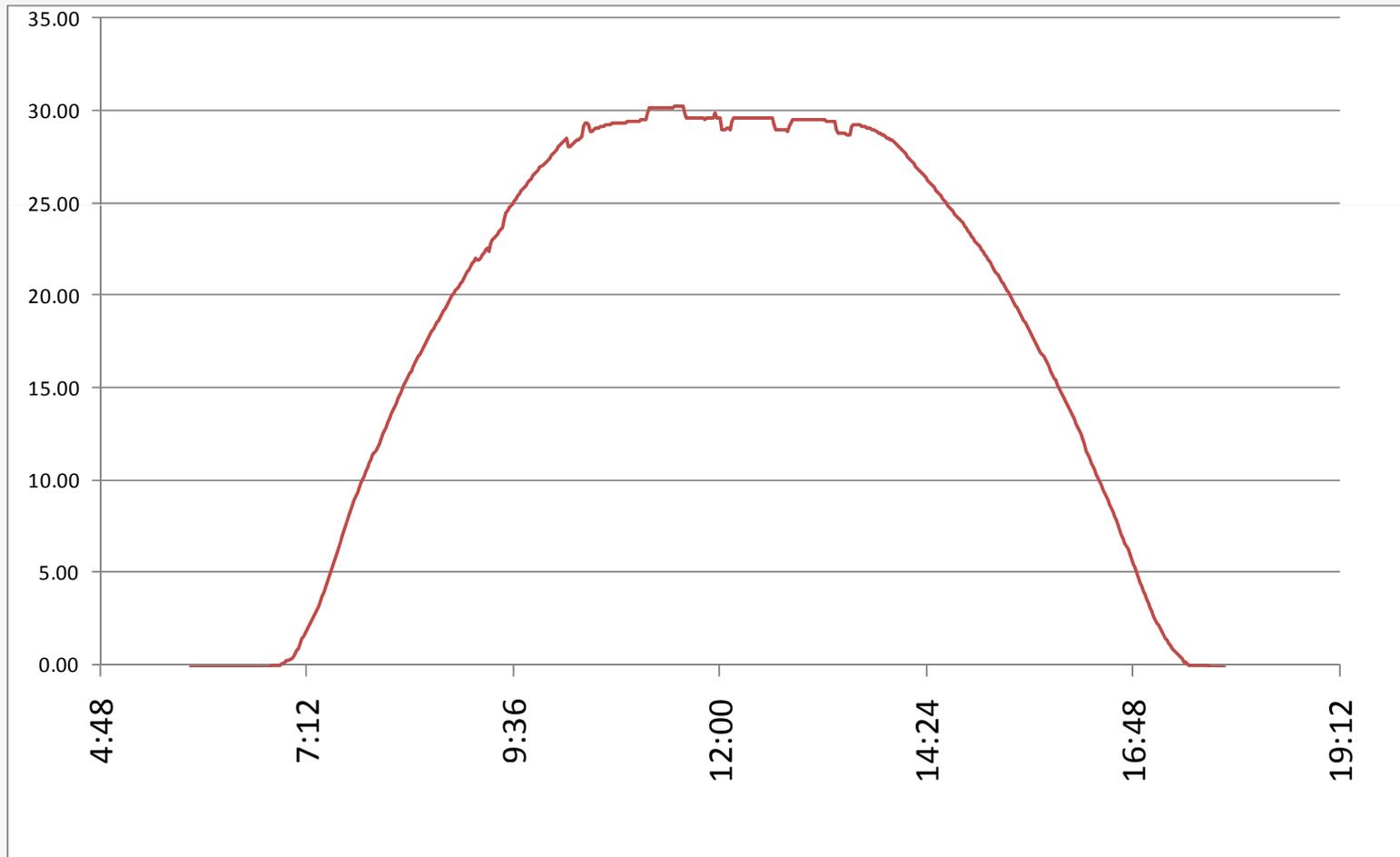


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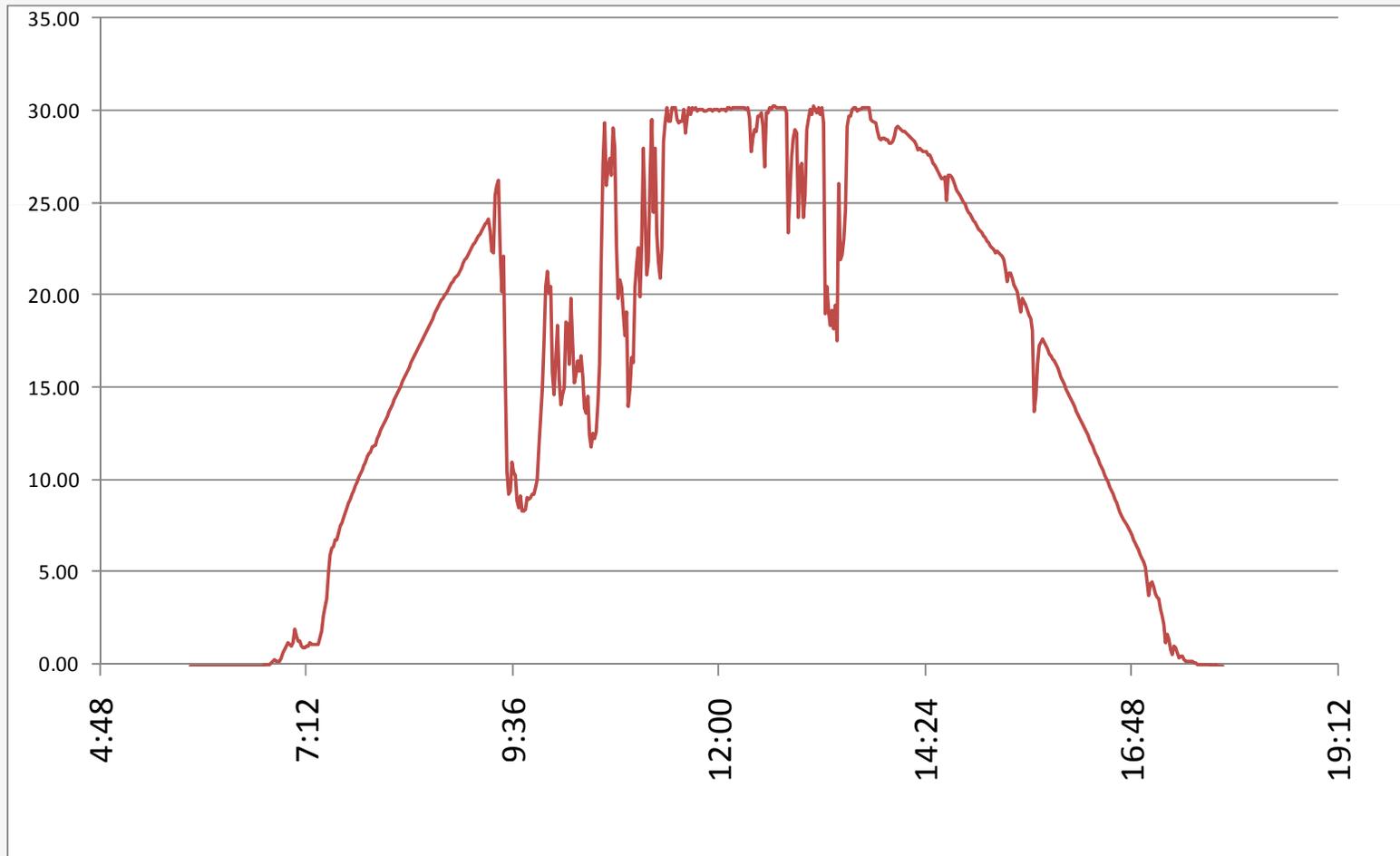


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ENERGY EFFICIENCY

Partly Cloudy





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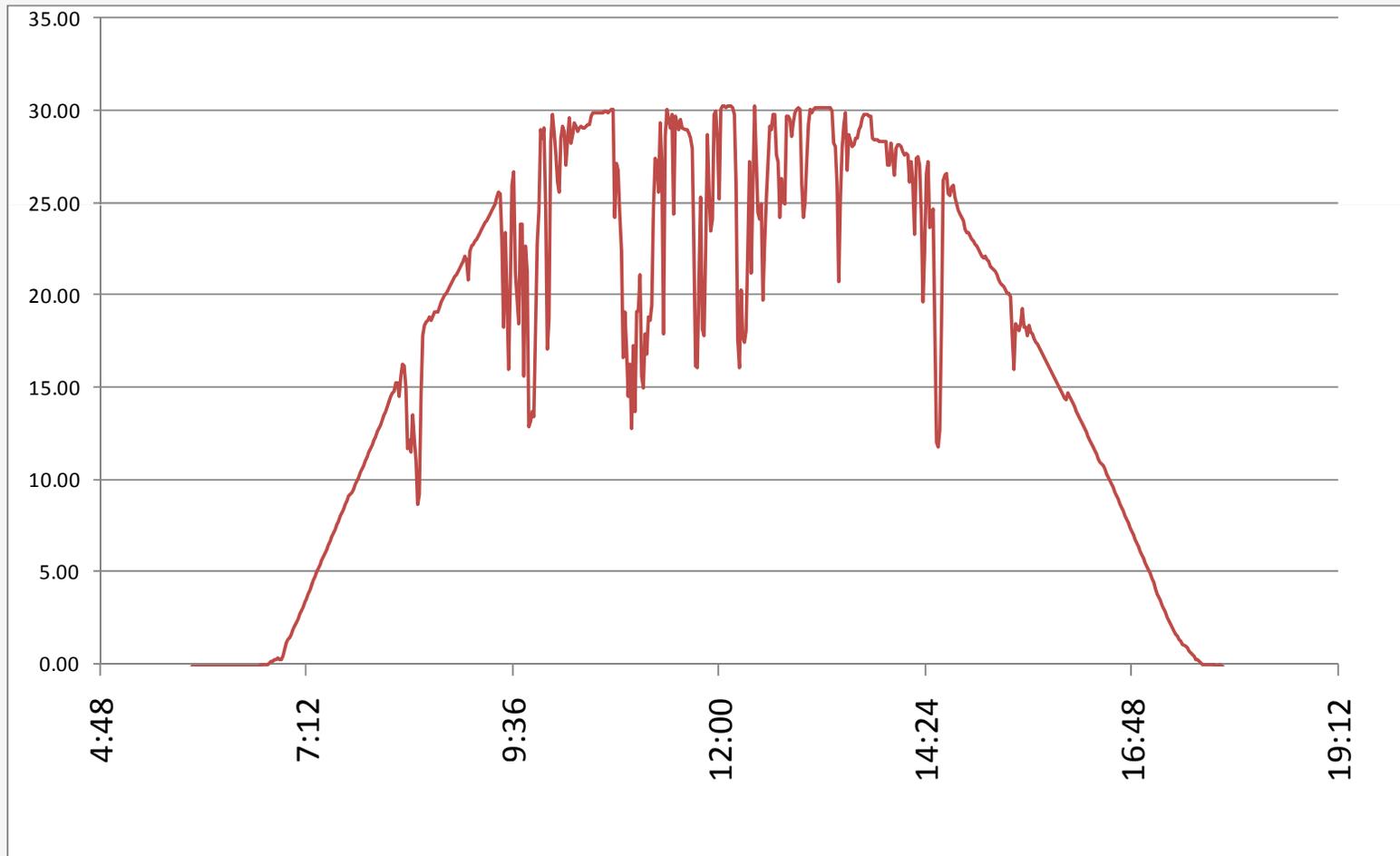


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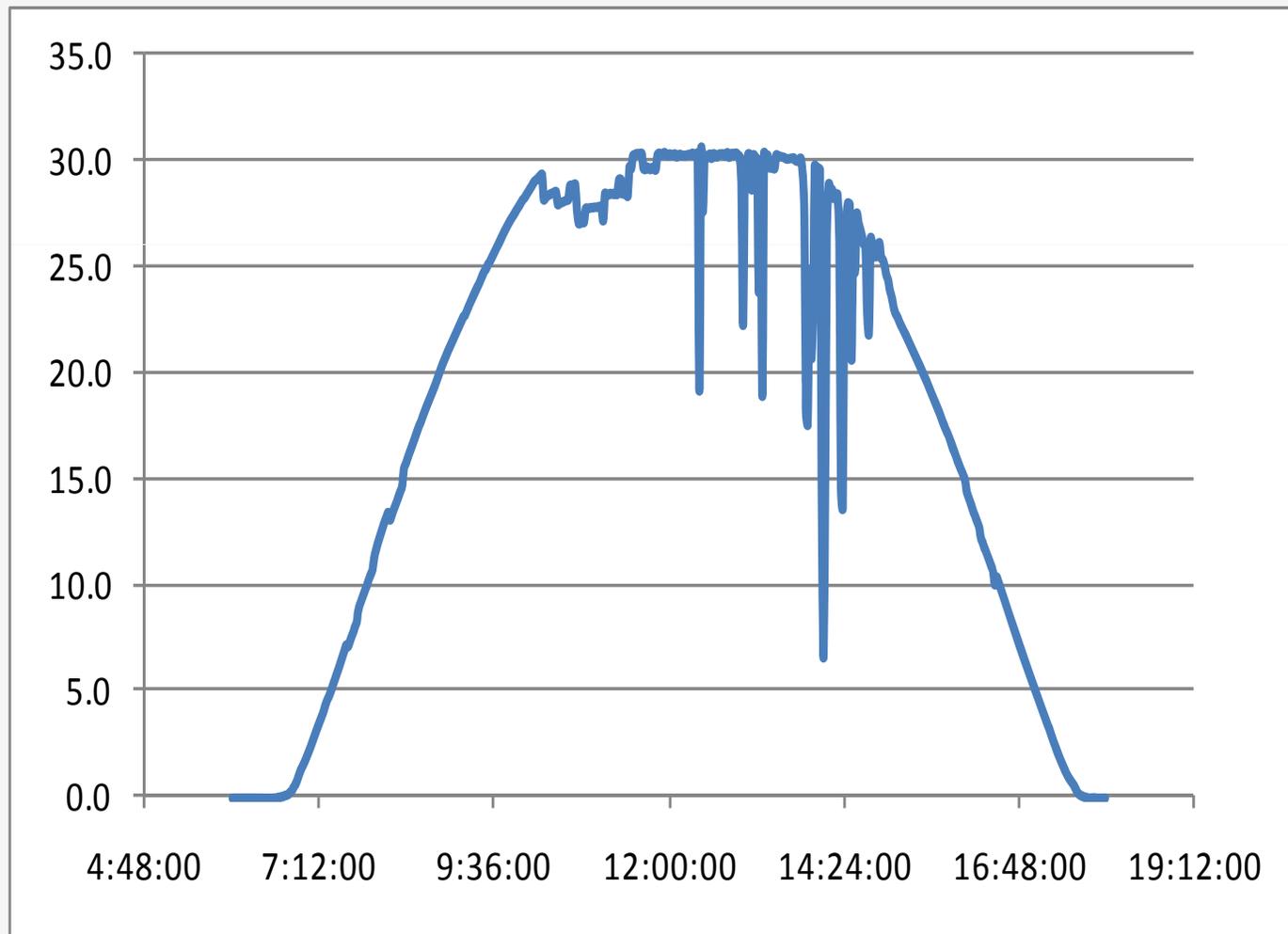


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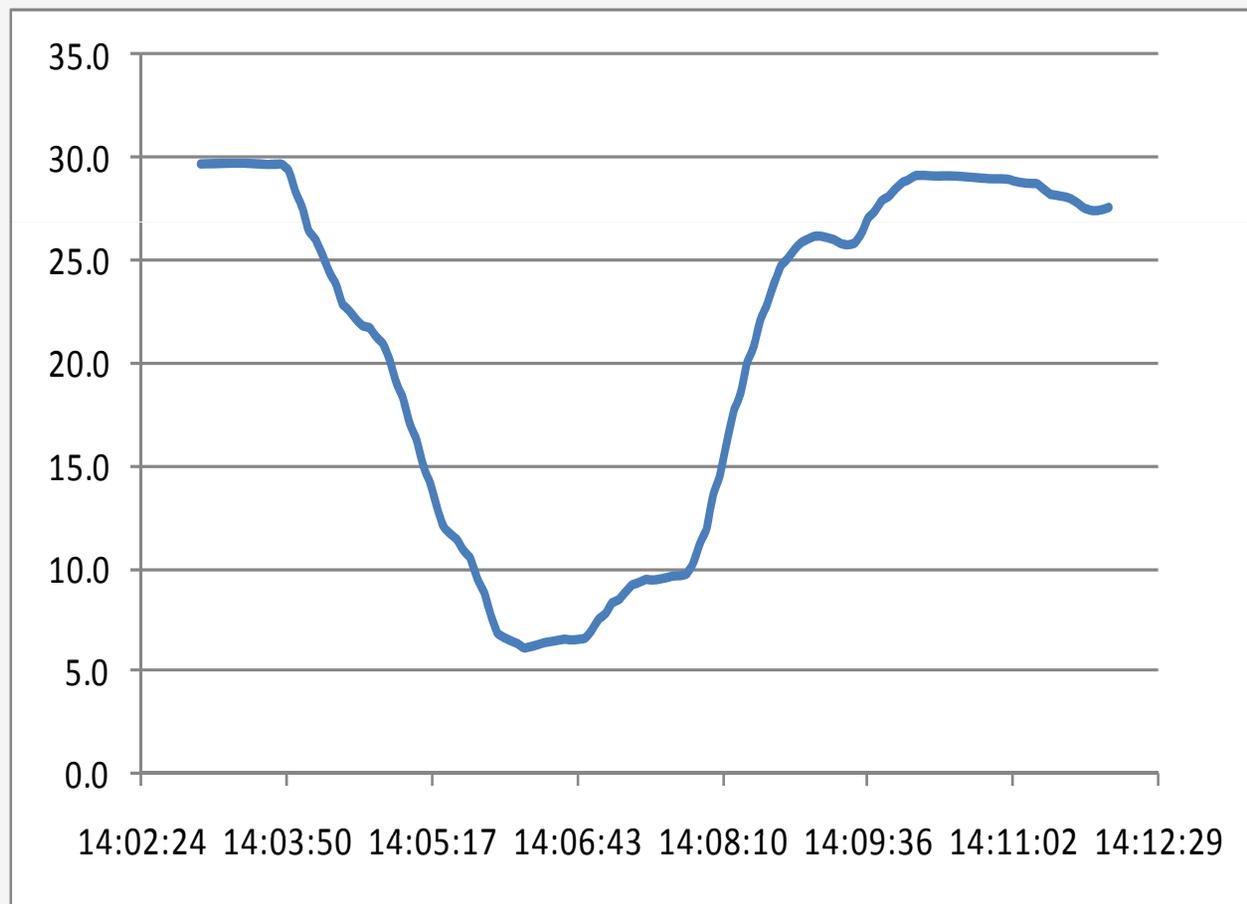


ENERGY EFFICIENCY

Fast Ramping (2/24/11)



Fast Ramping (2/24/11)



14:03:38	29.7
14:06:11	6.1
14:10:01	29.0



2010 Solar Electric Power Association's Utility Solar Rankings

Top 10 U.S. utilities that added most new solar power to their systems last year

- Tri-State ranked #6 nationally (30 MW)
- Tri-State highest ranked cooperative utility
- Cimarron largest electric cooperative solar PV project
- Kit Carson Electric Cooperative (Taos) ranked #2 nationally with 22.2 watts per customer and #4 with production of 620 kilowatts



Conclusions

- PV is a credible, but not inexpensive resource
- Tri-State service territory is well suited
 - latitude, clouds, inexpensive land
- Geographically distributed arrays should help fast ramping issues
- PV prices should continue to drop
- Fixed array = no moving parts/low maintenance
- Few permanent employees



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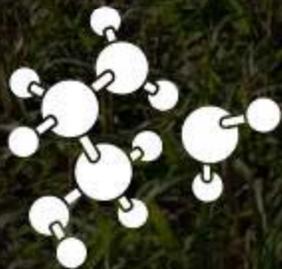
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Questions?

www.tristategt.org



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