

# APPENDIX A: NET ENERGY ANALYSIS

## INTRODUCTION

A net energy analysis was conducted for Powder River coal tracts at the site-specific analysis and cumulative analysis stages of coal activity planning. The results of the analysis for each tract are shown in the individual tract profiles.

Both types of analyses used the ratio of Btus expended in mining to the Btus recovered per pound of coal. A net energy analysis factor of 37.7 Btus expended to produce a pound of coal was used as directed in BLM Washington Office instruction memorandum 79-282.

## METHODOLOGY

Coal Btu content in the tracts selected ranged from 7,800 to 9,500 per pound for all leasing alternatives. To calculate net energy ratios by alternative, we multiplied the weighted average Btu content per tract by the total coal reserves in the tract, obtaining a weighted value. We then took the sum of these values for all tracts in a given alternative and divided it by the sum of the total coal reserves to get a weighted Btu content by alternative. This weighted Btu value was then divided by 37.7 to obtain ratios by alternative.

## NET ENERGY RATIO FOR EACH ALTERNATIVE

Alternative	Total Reserves <sup>1</sup> (In billions of tons)	Weighted Btu Value per pound	Net Energy Ratio
1	No leasing		
2	1.475	8,760	232 to 1
3	2.122	8,694	230 to 1
4	3.466	8,710	231 to 1
5	3.976	8,729	231 to 1
6	6.131	8,511	225 to 1

<sup>1</sup>The totals are for all reserves in the tract, including federal, state, and private coal.

## CONCLUSION

Favorable energy balances were found for all alternatives considered. Differences between ratios for the various leasing alternatives were not great enough to formulate meaningful conclusions about which alternative would be best.