CONTENTS

HIGHLIGHTS

I. GENERAL

CORPORATIONS
IGT Annual Report Describes Work on Oil Shale, Coal and Natural Gas 1-1
Montana Precision Mining to Test Skygas Process 1-2
Lurgi Annual Report Notes Activity in Gasification and Gas Cleanup 1-3

GOVERNMENT
Production Tax Credits Allowed for Alternative Fuels Under New Energy Act 1-5

ENERGY POLICY AND FORECASTS
New EIA Outlook Through 2010 Projects Slow Growth in Energy Demand 1-6
New GRI Forecast for 2010 Reduces Oil Price Outlook 1-8
Battelle Forecasts $162 Billion Increase in R&D Spending in 1993 1-9
World Energy Demand Projected to More Than Triple by Year 2100 1-11
API Argues Against President Clinton’s Proposed BTU Tax 1-13

ENVIRONMENT
Particulate Emissions Could Offset Global Warming From Fossil-Based CO₂ 1-15

RESOURCE
DOE Study Finds U.S. Low-Cost Oil Resource Base to be Larger Than Previous Estimates 1-17

COMING EVENTS

II. OIL SHALE

PROJECT ACTIVITIES
Stuart Project Gets Approval for Tax Deductions 2-1

TECHNOLOGY
Beneficiation Prior to Hydrotreating Found Not to Cause Leaching Problems 2-2
Retort Temperature Found to be Most Important Influence on Oil Quality 2-2
Secondary Cracking of Oil Vapors on Combusted Shale Particles Confirmed 2-5
Effects of Minerals in Processing Australian Oil Shales Reviewed 2-7

WATER
Oil Shale Companies May Sell Their Water to Las Vegas 2-10
RESOURCE

USGS Evaluates Shale-Oil Resource in Eastern Uinta Basin
Oil Shale Mining Claims Status Updated

STATUS OF OIL SHALE PROJECTS

INDEX OF COMPANY INTERESTS

III. OIL SANDS

PROJECT ACTIVITIES

Shell to Test AOSTRA SAGD Process at Peace River
Power Outage Costs Suncor, Equipment Upgrading Under Way
Orimulsion Gasification Plant Slated for Puerto Rico

CORPORATIONS

Suncor Reports Income Gain in 4th Quarter

ENERGY POLICY AND FORECASTS

Gasoline Reformulation Will Affect Canada's Synthetic Crude Oil Industry

TECHNOLOGY

Horizontal Wells Effective at Extending Recovery From Cyclic Steam Operation
Nitrogen Removal From Whiterocks Bitumen Found to be Difficult
CANCENET Coprocessing Residue Beneficiated by Oil Phase Agglomeration
In Situ Combustion Yields Slightly Upgraded Product
Nomenclature of Residuum Upgrading Reviewed

INTERNATIONAL

Heavy Oil to Ammonia Plant Being Built in Inner Mongolia
Chinese Engineers Receive Training at UTF in Alberta
Orimulsion Hits Environmental Barrier in Britain

STATUS OF OIL SANDS PROJECTS

INDEX OF COMPANY INTERESTS

SYNTHETIC FUELS REPORT, MARCH 1993
IV. COAL

PROJECT ACTIVITIES

Great Plains Production Revenue Continues to Look Good 4-1

CORPORATIONS

Kennecott Buys Cordero Coal Mine 4-3

GOVERNMENT

DOE Receives 24 Proposals for Clean Coal Round V 4-4
DOE to Fund Advanced Gas Turbine Research 4-5

ECONOMICS

Economics of Molten Carbonate Fuel Cells Looking Promising 4-7
IGCASH Concept Could be Competitive With Natural Gas 4-9
Two-Stage Direct Liquefaction Estimates Now at $38 Per Barrel 4-12
Byproduct Developments Prove Disappointing at Great Plains 4-13
Integration of Oxygen Supply Into IGCC Plant Could Save 4% on Capital Cost 4-16

TECHNOLOGY

Coupled Gasifier/Fuel Cell With Hot Gas Cleanup Shows High Efficiency 4-18
Pre-Treatment Concepts Being Studied for Direct Liquefaction 4-19
Combined Pyrolyzer/CPFBC Shows Promise for Combined Cycle Applications 4-20
EERC Summarizes Status of Conversion Technology for Fort Union Lignite 4-22
Wabash River Project Will Advance Destee's Gasification Technology 4-26
Coal Solutions May Be New Route to Upgraded Products 4-26
Petroleum Coke Proves Good Feedstock for Shell Gasifier 4-28
Combination Solvent Extraction and Gasification Process Shows Advantages 4-29

INTERNATIONAL

Tokyo Gas has Bench-Scale Hydrogasifier Based on Rocket Engine Technology 4-32
Endesa's IGCC Project in Puertollano, Spain Reviewed 4-33
Japanese Liquefaction Research Reviewed 4-36
Hydrothermal Dewatering Reduces Reactivity of Brown Coal for Liquefaction 4-37
Coal/Water Fuels are Commercialized in Japan 4-38

ENVIRONMENT

Recovery From Coal Gasification Most Efficient CO₂ Removal Technique 4-41

RESOURCE

Increased Coal Consumption in 1993 Forecast for U.S. 4-43

COAL PUBLICATIONS/PATENTS 4-45

STATUS OF COAL PROJECTS 4-49

INDEX OF COMPANY INTERESTS 4-97
V. NATURAL GAS

CORPORATIONS

Methanex to Acquire Fletcher Challenge
BP Planning Démonstration Plant for Gas Conversion Process

ENERGY POLICY AND FORECASTS

NERA Forecast Shows Increase in Natural Gas Prices

TECHNOLOGY

New Direct Routes for Conversion of Natural Gas Described
Methane Dimerized in Microwave Plasma

STATUS OF NATURAL GAS PROJECTS