



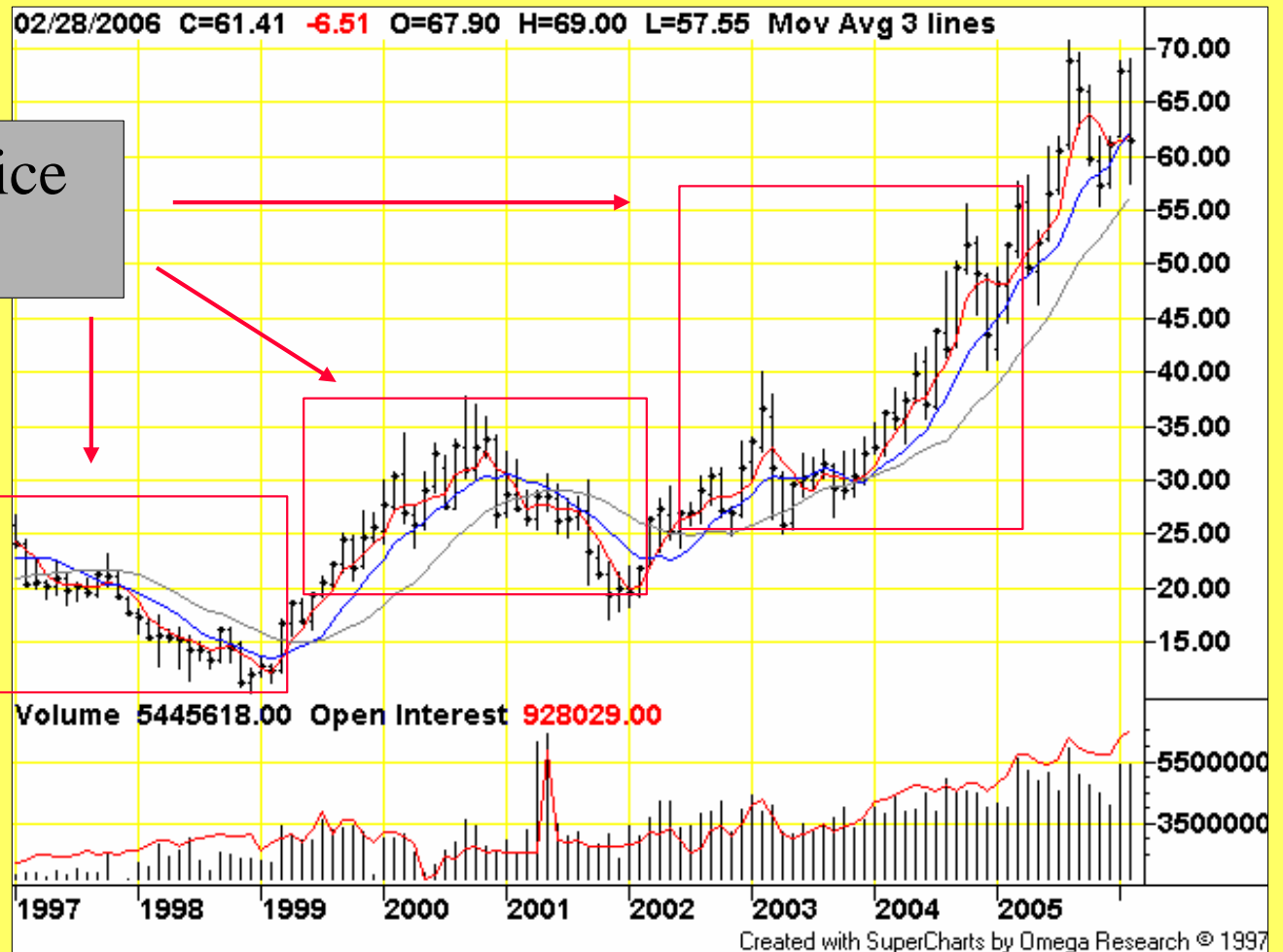
OFBF Self-Help Energy Programs

Challenges and Opportunities

Biomass Sources for New Energy

Energy Market Trends - Crude Oil

Upward Price Cycles



Energy Market Trends - Natural Gas

Upward Price Cycles

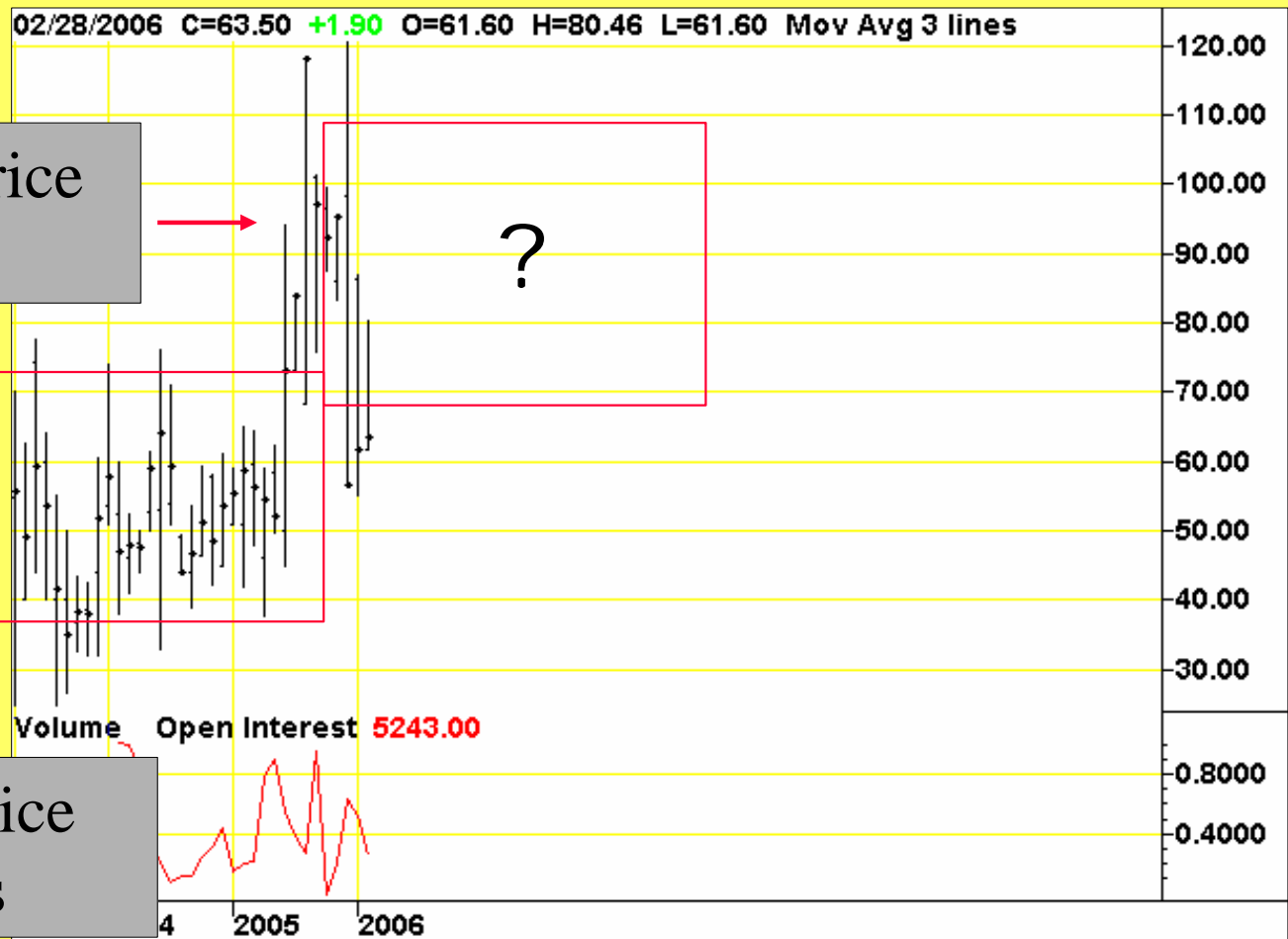


Energy Market Trends - Electricity

Upward Price Cycle

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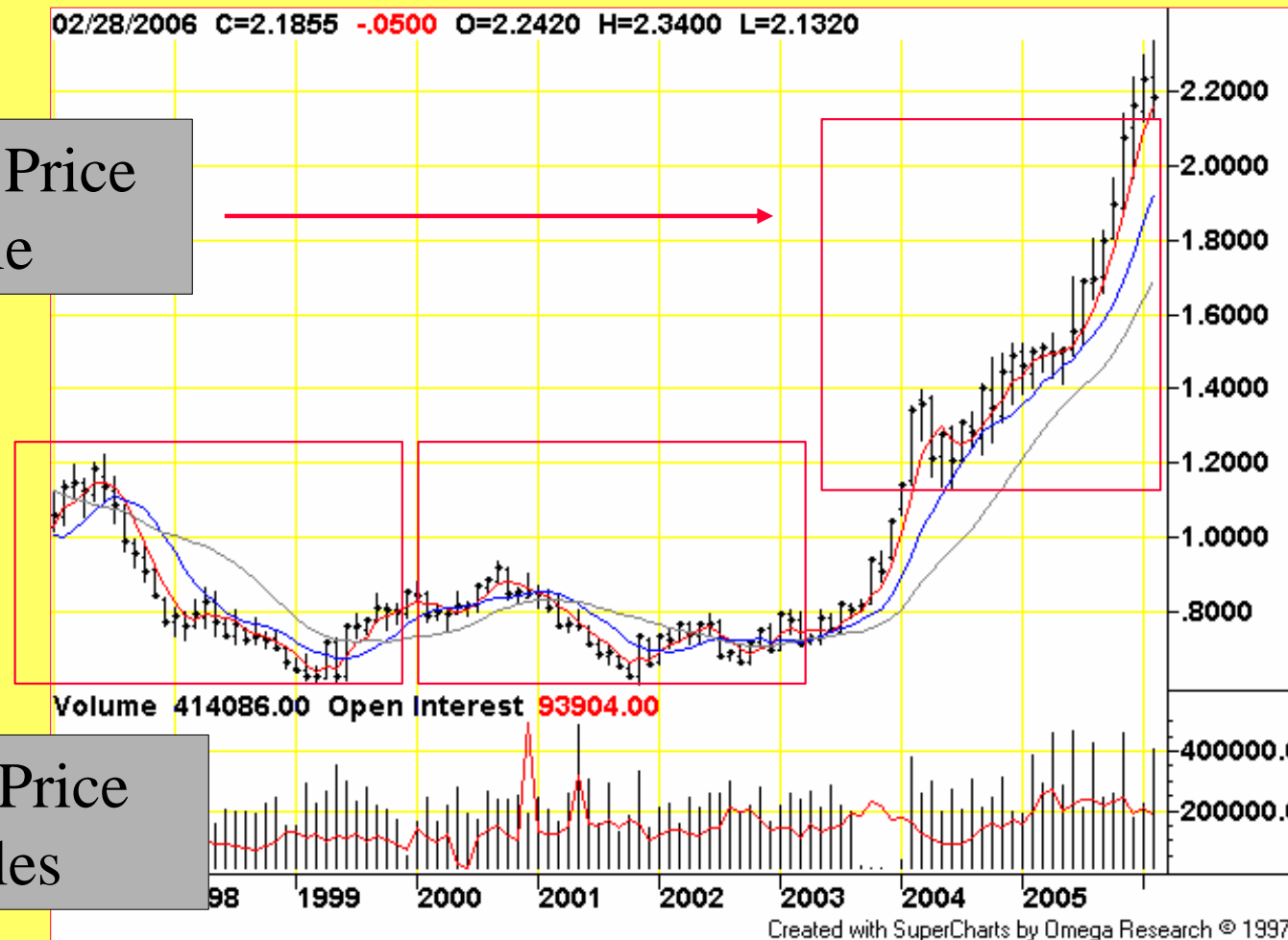
Stable Price Cycles



Energy Market Trends - Copper

Upward Price Cycle

Stable Price Cycles



Energy Sources - Electricity

- Coal & Nuclear Expansion to Handle Base Load Capacity
- Renewables & Electricity:
 - ☑ Wind and Solar
 - ☑ Fuel Cell Potential
 - ☑ On-Site Generation

Infrastructure - Electricity

- Centralized System
 - ☑ Large Plants - Coal & Nuclear
 - ☑ Aging System
- Decentralized System
 - ☑ Strategic Placement of Generation
 - ☑ On-Site and Smaller Utility Generation - Wind, Solar, Fuel Cell
 - ☑ Utility Interconnection Issues

Energy Sources - Liquid Fuels

- Proven Oil & Gas Reserves Identified
 - ☑ Central Asia, Pacific Rim
 - ☑ Atlantic Seaboard, Deep Gulf
 - ☑ Africa
 - ☑ Mexico, Canada
 - ☑ Latin America
 - ☑ Western United States

Infrastructure - Liquid Fuels

- Traditional Fuel Production - Shrinking Capacities:
 - ☑ Drilling, Refining
 - ☑ Transportation/Pipelines
 - ☑ Receiving & Storage Facilities
- Biofuels - Expanding Capacities:
 - ☑ Ethanol & Biodiesel Development
 - ☑ Corn, Soybean and Cellulosic

Energy Supplies - Addressing the Cost

Updating, Incorporating, Creating
New Infrastructure, New
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Resources to Address Our Nation's
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Where Does Biomass Fit?

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- Electric Generation:
 - ☑ Large Feed Stock Concentration
 - ☑ Large Economies of Scale

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 - ☑ Large Economies of Scale
 - ☑ Municipal Waste to Energy
 - ☑ Landfill & Methane Recovery
 - ☑ Wastewater Treatment & Methane Recovery

Where Does Biomass Fit?

- Fuel Production:
 - ☑ Smaller Concentrations of Feed Stock
 - ☑ Greater Attention to Detail

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- Fuel Production:
 - ☑ Smaller Concentrations of Feed Stock
 - ☑ Greater Attention to Detail
 - ☑ Food Manufacturers
 - ☑ Biomass Collection Projects
 - ☑ Farms

Where Does Biomass Fit?

- Electric Production:
 - ☑ Sources *Can* be Found to Meet Demand
- Fuel Production:
 - ☑ Sources *Must* be Found to Meet Demand
 - ☑ Corn & Soybeans Can't do it Alone...

Energy Trends - Initiatives, Challenges & Opportunities

■ National 25x'25 Initiative...

- ☑ Twenty-five (25) percent of the nation's energy requirements must come from domestic, renewable resources by 2025.
- ☑ Major shifts in energy use and efficiency, resource use, finance, infrastructure, *cultural* development.
- ☑ This generation's greatest challenge.



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