

# Utah Renewable Energy Conference 2011

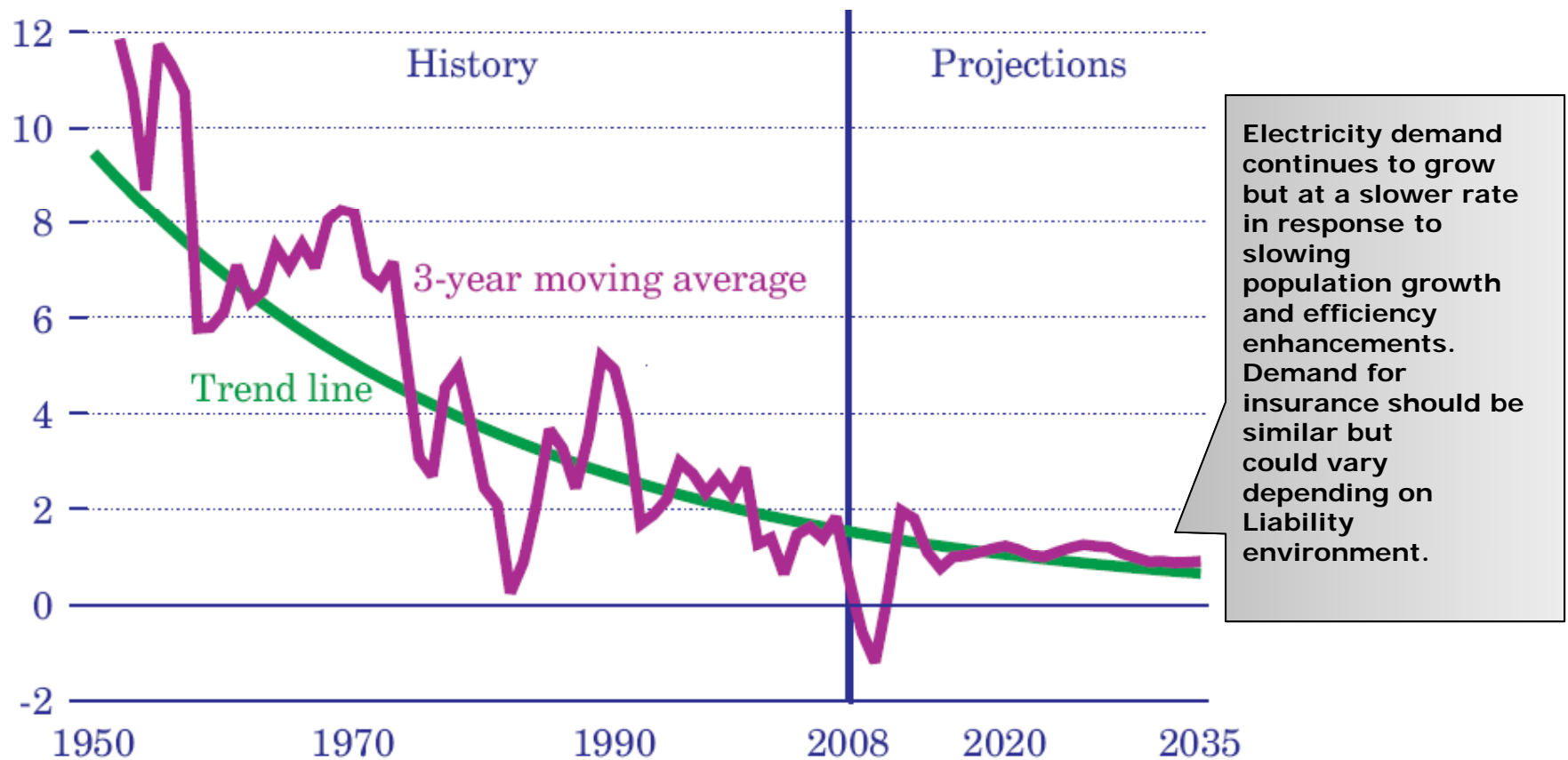
## Insuring Renewable Assets

**R. Michael Niemeyer, Vice President**  
Director Utility Practice Group

Wells Fargo Insurance Services, USA  
1014 Vine Street  
Cincinnati, OH  
513-333-2155  
April 19, 2011

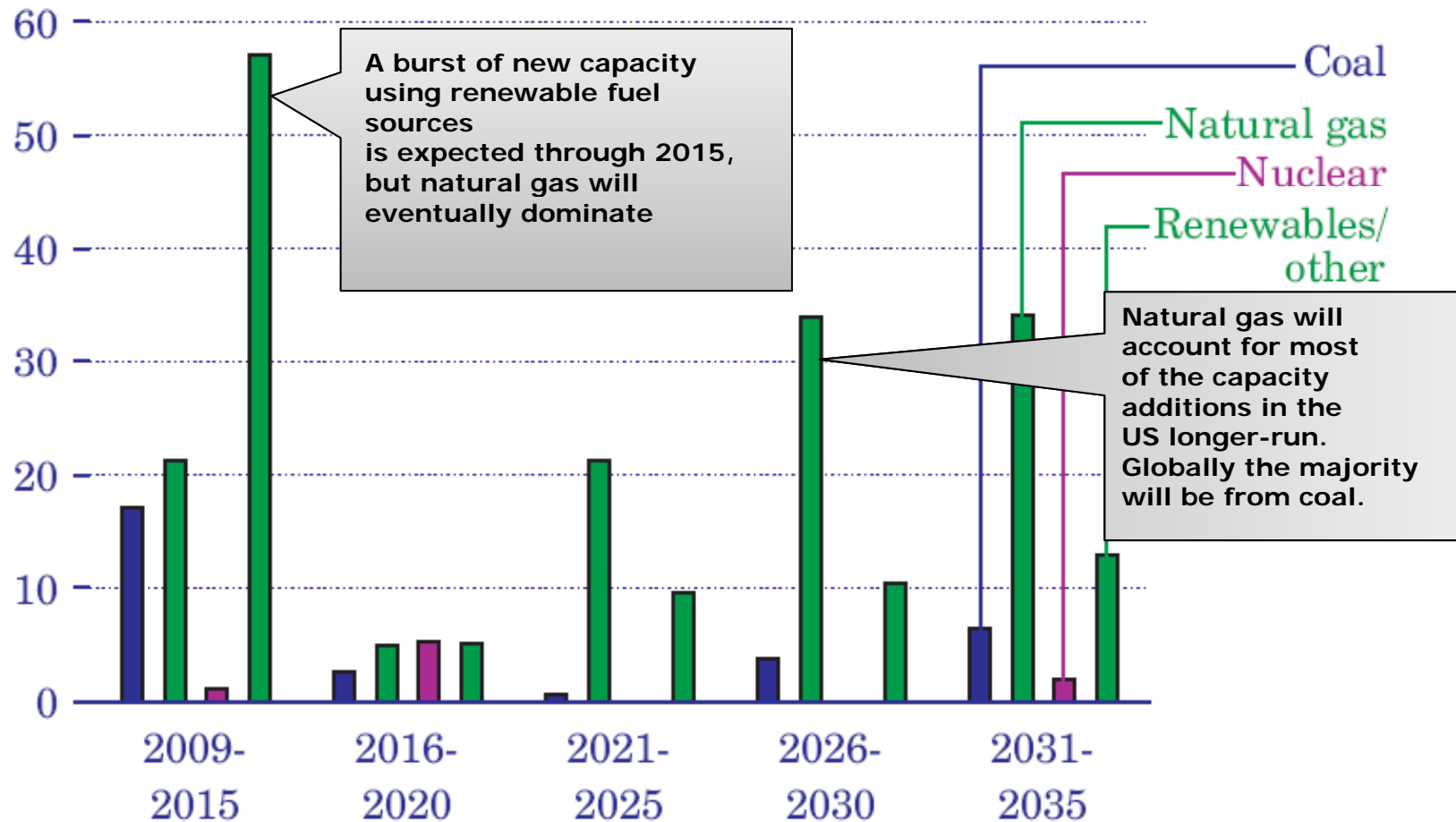


# US Electricity Demand Growth 1950-2035P (billions kilowatt hours)



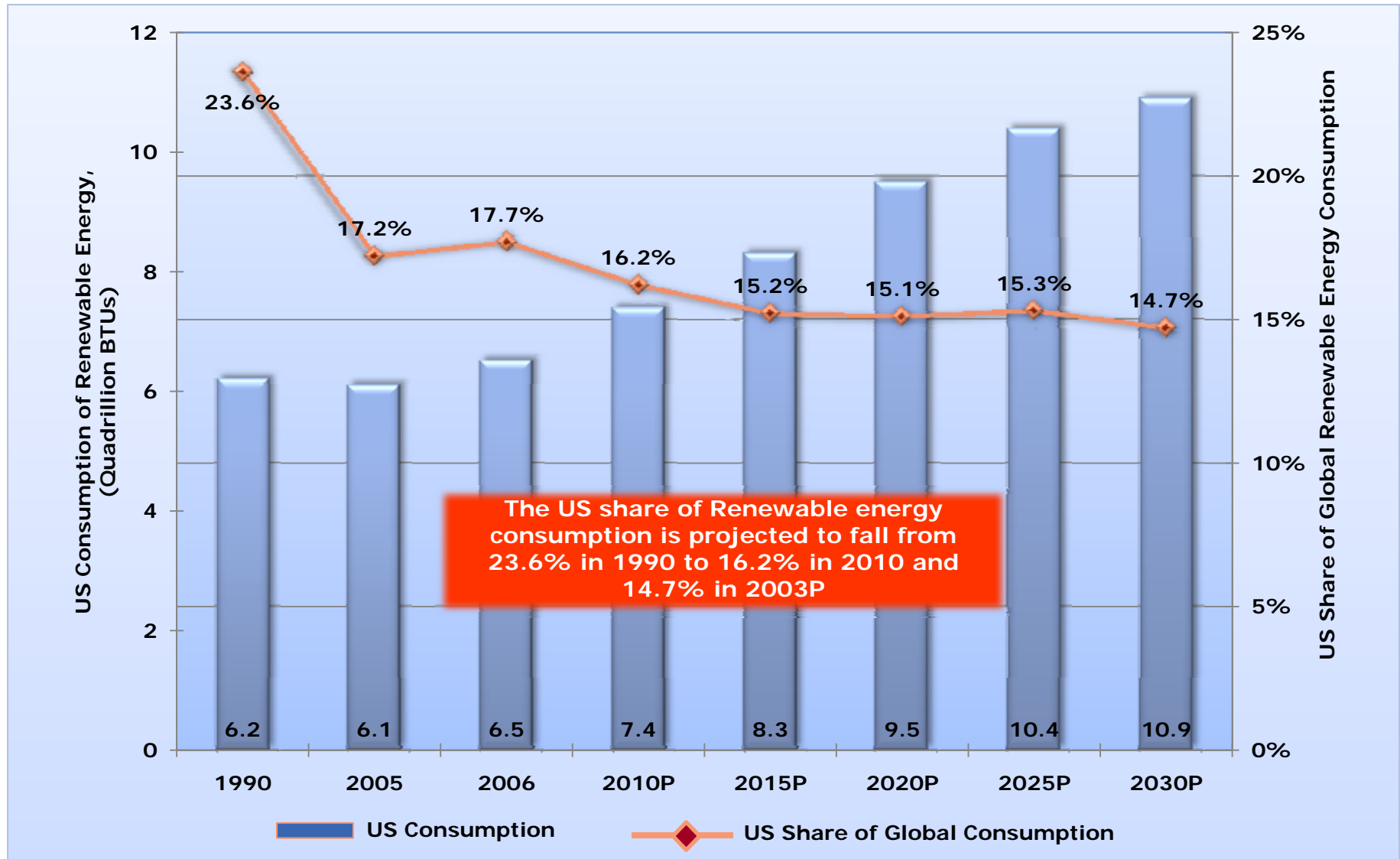
Source: Energy Information Administration, Annual Energy Outlook 2010, Insurance Information Institute

# US Electricity Generation by Fuel Type 2009-2035P (gigawatts)



Source: Energy Information Administration, Annual Energy Outlook 2010, Insurance Information Institute

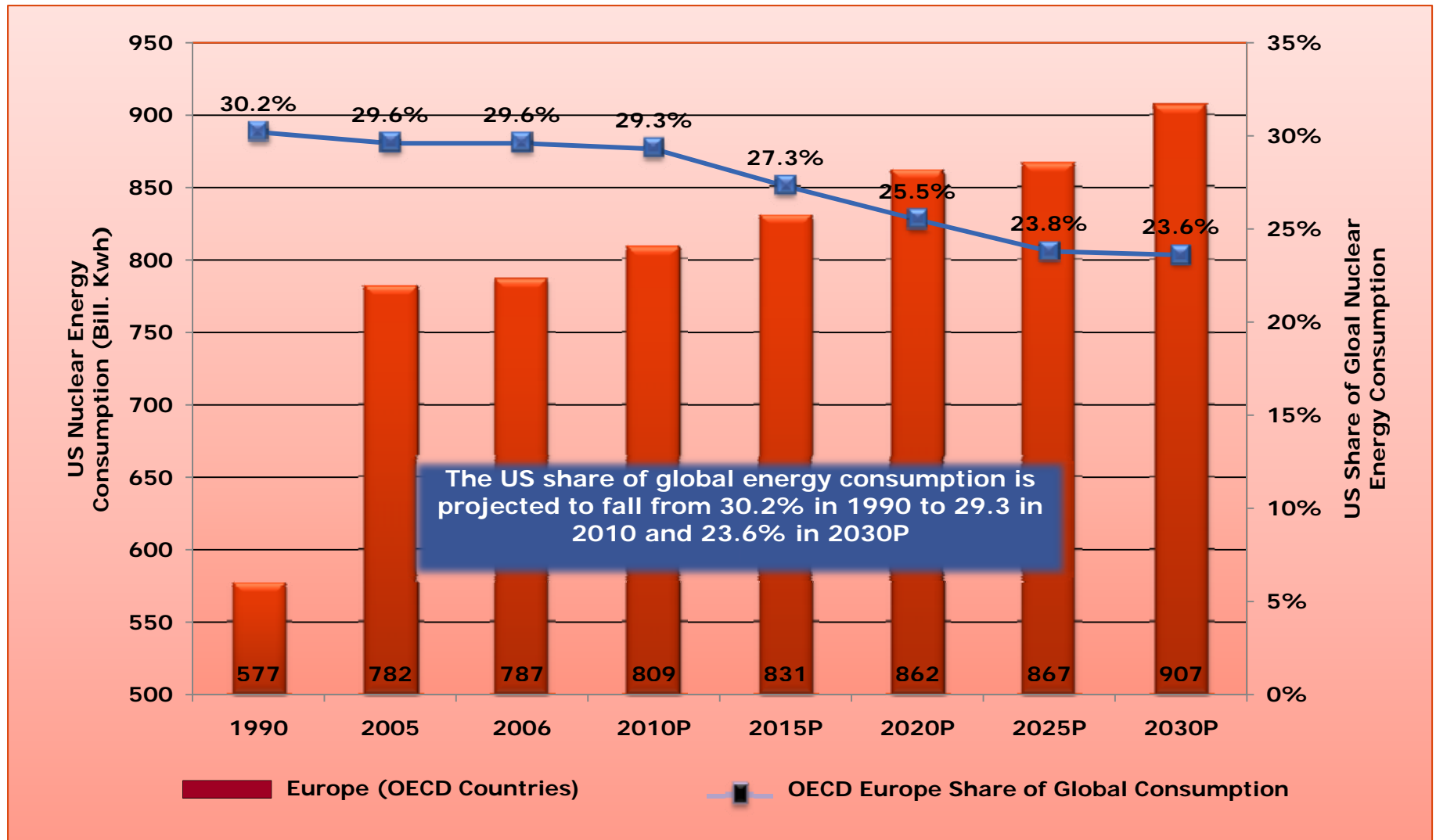
# US Consumption of Hydroelectric & Other Renewable Energy



Source: Energy Information Administration, 2009 International Energy Outlook, Insurance Information Institute calculations

Wells Fargo Insurance Services

# US Nuclear Energy Consumption as a Share of Global Consumption: 1990-2030P



Source: Energy Information Administration, 2009 International Energy Outlook, Insurance Information Institute calculations

# Investing in America's Electric Future

- **Electric utilities are entering a new cycle of growth and investment, and a new era of ratemaking**
- **If utilities are able to make investments in infrastructure improvements, benefits will include:**
  - *Long-term reductions in operating costs*
  - *Enhancements of reliability and power quality*
  - *Improvements in competitive power markets*
  - *Cleaner generation*
  - *Increased customer choice and control over energy use*



# Key Industry Challenges

- Environmental regulations and other environmental policy
- Developing and commercializing advanced coal technologies and carbon capture and storage
- Licensing and building next generation of nuclear facilities and addressing spent fuel disposal
- Natural gas supply
- Developing battery and commercializing plug-in hybrid electric vehicles
- Building new transmission infrastructure, especially for renewables
- Rising costs of doing business
- Rate structure to encourage utility investment in energy efficiency

# Insurance Companies who Continue to support the Power Generation Industry including Renewables

- Travelers
- Aegis
- Chubb
- Hartford
- ACE
- Chartis
- Power Guard
- Liberty International

# Insurance Underwriting Concerns for Renewable Assets

- Rushing Proto Types into Production
- Increase in Wind Turbine size
- Inadequate field testing
- Gearbox vs. Direct Drive
- Warranty Language
- Foreign Suppliers
- Solar Technology Changes Twice Annual
- Lack of Solar Racking System Standards
- Roof designs







**Wells Fargo Insurance Services**



**Wells Fargo Insurance Services**



**Wells Fargo Insurance Services**



**Wells Fargo Insurance Services**



**Wells Fargo Insurance Services**



**Wells Fargo Insurance Services**



**Wells Fargo Insurance Services**



**Wells Fargo Insurance Services**