December 2009, Roanoke, WV

CHARTIS

2009 West Virginia Energy Summit

A Wall Street View of the Energy Space

Outline

I. Current Situation: From Investors to EPC contractors
II. Effects on Energy Sectors
III. Renewables vs. Base Load Power
IV. Energy Policy Perspectives

I. Current Situation: From Investors to EPC contractors

Current Financial Situation

- Markets are still basically shut down.
- Commercial banks are unable to securitize loans to generate new lending capacity and are very risk averse.
- Investment banks are having difficulty doing deals.
- Rating agencies have tightened their standards.
- There is less willingness to take risk.
- Greenhouse gas / CO2 policies, if put in place, could add 25 to 40% to capital cost of projects, reducing debt service coverage ratios.
  - Everyone is watching this for its impact on new and existing fossil-fueled plants.

EPC Perspective

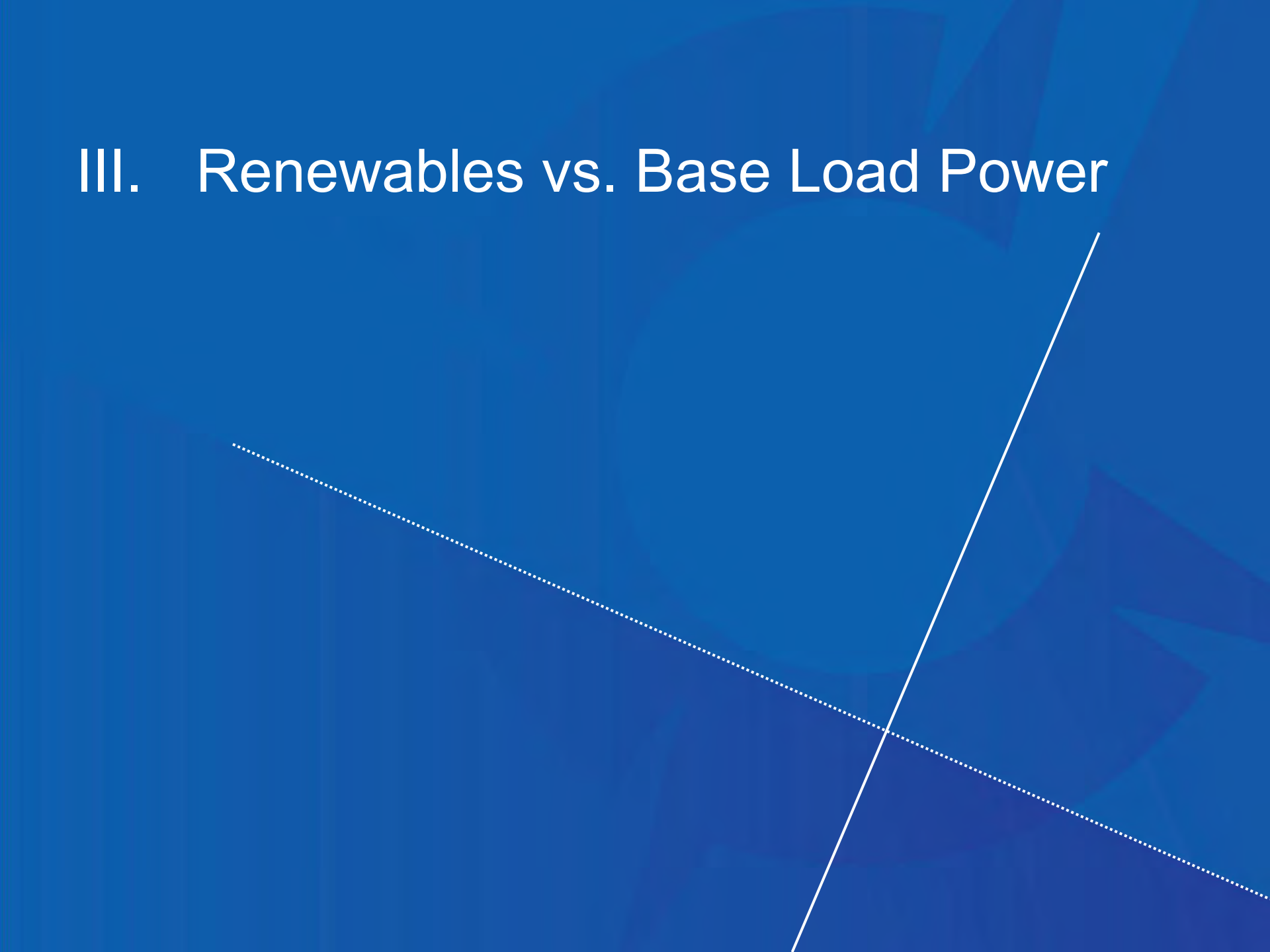
- One bright spot: Lack of financing has reduced backlogs.
- Result: More developer-friendly EPC contracts.

II. Effects on Energy Sectors

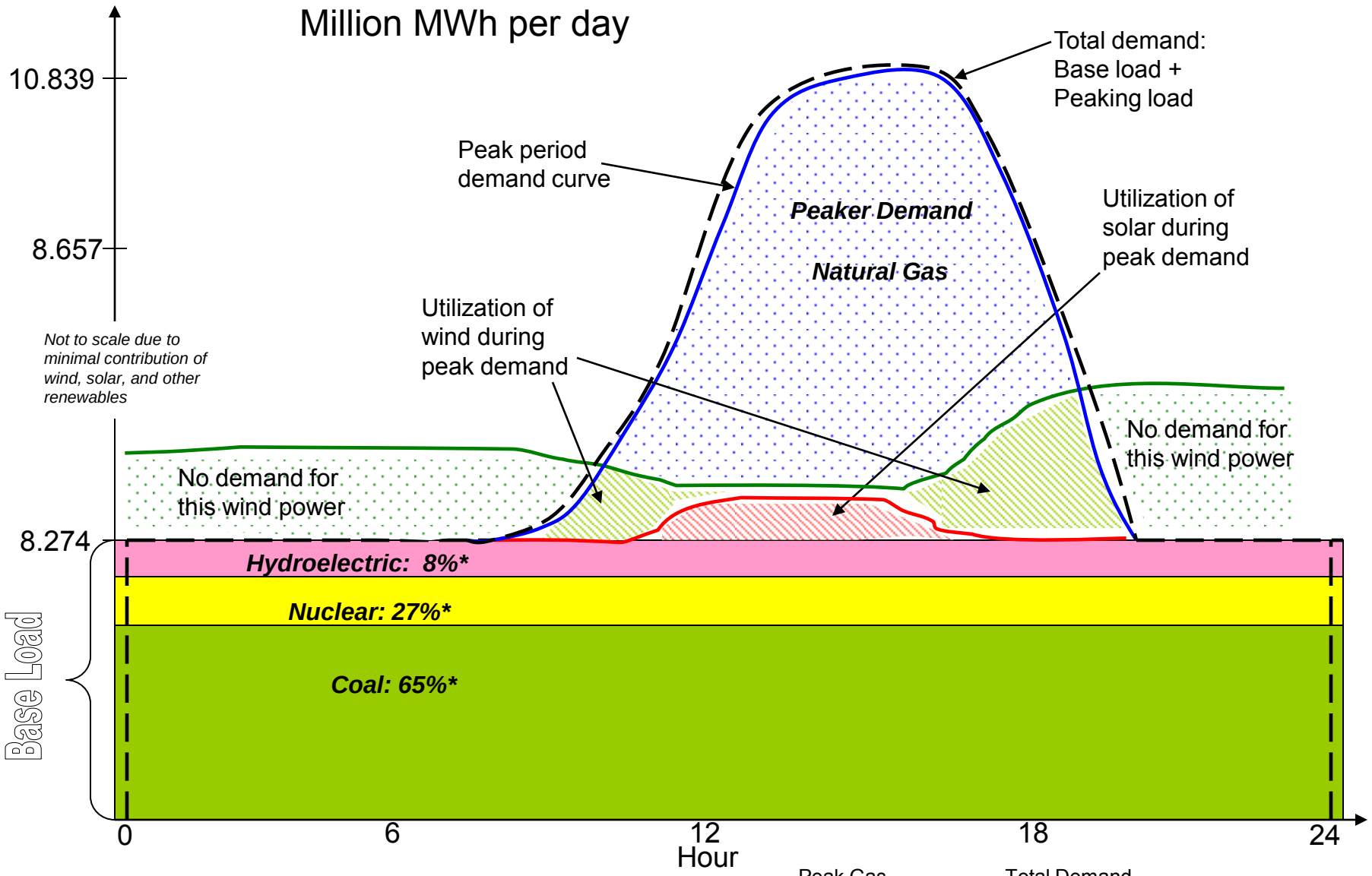
Impacts by Sector

- WIND
  - > Economic downturn delaying wind power projects
  - > Impact will be short term due to strong sector fundamentals
  - > Easy, short term developer profits
- SOLAR
  - > Economic downturn could lead to industry consolidation, as giants in the solar industry take over smaller companies.
  - > Market is being flooded with Chinese supplied panels with current prices down almost 50%.
- GEOTHERMAL
  - > Despite recession, geothermal power projects continue to move forward.
  - > New questions related to increased seismic activity and reduction of output in existing wells due to new drilling.
- COAL
  - > Power companies reassessing “greenfield” projects, and instead are adding generation at existing sites.
  - > Coal producers expect U.S. to become an important supplier to countries in Asia, particularly India and China, where demand remains strong.
  - > Our best shot at energy independence will be exported.
- NUCLEAR
  - > Impact of financial crisis on nuclear sector is likely to be limited since it is already moving too slowly.
  - > Support from nuclear-friendly states can result in substantial cost reductions through early rate basing.

III. Renewables vs. Base Load Power



U.S. Total Demand vs. Wind & Solar, 2008



* Of Base Load Demand

Source: B. Percopo, Chartis Inc.

IV. Energy Policy Perspectives

CHARTIS

Reality vs. Political Spin

SPIN	REALITY
• Solar and wind can be used to provide base load power.	• Only coal, nuclear, and hydroelectric can provide base load power, supplemented by waste to energy technologies.
• Nuclear power is dangerous, poses a security risk, and generates radioactive waste that is hard to contain.	• Nuclear can provide base load power and incremental capacity with no carbon footprint. • Many countries moving ahead while U.S., with about 25% of total worldwide reactors, is creeping along.
• Coal is dead.	• CTL technologies could provide the U.S. with a key opportunity for diversification of liquid fuel supplies.
• Ethanol will solve our transportation fuels issue.	• Phase separation • Affinity for moisture • Corrosive nature • Florida litigation against big oil.

CHARTIS

The Link between Coal and Nuclear

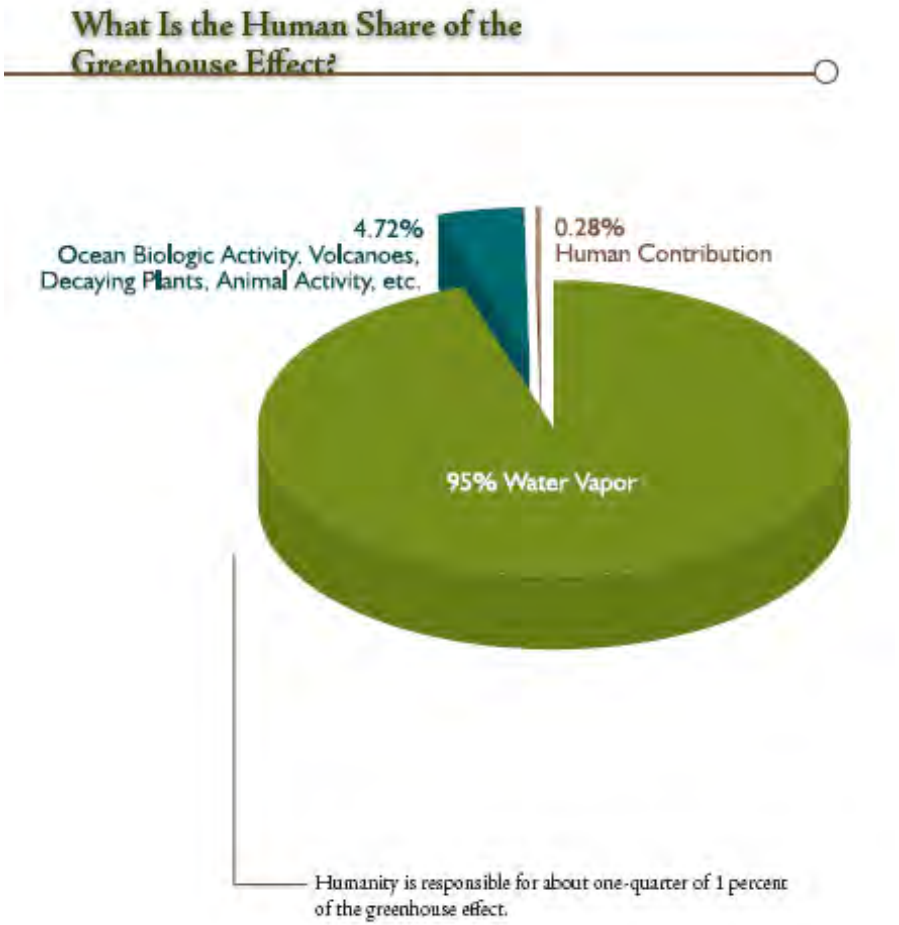
- U.S. can support coal by increasing reliance on nuclear energy
- We need nuclear energy in order to become energy independent (Environmental benefit: zero GHG emissions).
- Lack of energy independence and security means increased risk of economic hardships here.
- Increased reliance on nuclear energy will allow U.S. to shift coal from a power generation fuel to a transportation fuel (Security & Independence).
- U.S. is the Saudi Arabia of coal with over 300 year coal supply at current usage rates.
- If we accelerate usage rate from 300 to 100 years (enough time to get us to next generation of transportation fuels):
  - **Coal used for power generation can now be shifted to transportation fuels (about 4 million barrels a day)**
  - **If DOE estimate of incremental power from coal goes to nuclear, we go to approximately 5.5 million barrels a day**
  - **If we shut down 60 – 70 year old coal plants (like New York City's ConEd), we can produce up to 9.9 million barrels a day**
- By maximizing coal use, we free the next generation from increased dependence on foreign energy suppliers.

CHARTIS

Cost of Carbon Abatement

- Various studies have come out critical of the climate legislation just passed by the House and now being debated in the Senate.
- Some studies estimate cumulative GDP losses over 2012 – 2030 range from $2.2 trillion (low cost case) to $3.1 trillion (high cost case)
- GDP lower by 2.5% in 2050
- In 2030 there are between 1,790,000 and 2,440,000 fewer jobs
- Disproportionate negative impact to developed economies.
- A lot of pain for minimal gain: global temperatures would moderate by only hundredths of a degree in 2050, and no more than two tenths of a degree Celsius by the end of the century.

Mankind's Contribution to GH Effect



Q&A

Global Marine & Energy – Project Finance Advisors

Bob Percopo
Executive Vice President
175 Water Street, 29th Floor
New York, NY 10038

Phone: 212–458-5994
Fax: 212–458-5907
Email: Bob.Percopo@chartisinsurance.com

Chartis is a world leading property-casualty and general insurance organization serving more than 40 million clients in over 160 countries and jurisdictions. With a 90-year history, one of the industry most extensive ranges of products and services, deep claims expertise and excellent financial strength, Chartis enables its commercial and personal insurance clients alike to manage virtually any risk with confidence.

Chartis is the marketing name for the worldwide property-casualty and general insurance operations of Chartis Inc. For additional information, please visit our website at www.chartisinsurance.com.