

# NORTH AMERICAN HYDROPOWER

## Finance & Investment Summit

December 2-4 2009 | Washington, DC

*Pre-Summit*

## PUMPED STORAGE BUSINESS FORUM

8:00 am to 12:00 pm ♦ December 2, 2009

“We should start to invest heavily in pumped hydro storage”

- Energy Secretary Dr. Steven Chu, National Clean Energy Project [Feb 23, 2009]

8:00 – 8:15 **WELCOME AND INTRODUCTION BY THE FORUM CHAIR**

8:15 – 9:00 **VALUATION DRIVERS FOR PUMPED STORAGE PROJECTS**

The value proposition for pumped storage is very much a function of the market and location where the facility is placed into service. Increases in wind generation resources, as an example, create integration issues in some energy markets that can be mitigated with pumped energy storage. The presentation will discuss key valuation drivers, and the interplay of these drivers associated with pumped storage projects including:

- Arbitrating energy prices
- Providing ancillary services
- Firming of capacity
- Optimization of infrastructure requirements
- Economics of renewable energy projects

**Rick Miller, P.E.**, *Senior Vice President Hydropower Services, HDR/DTA; Former President, NATIONAL HYDROPOWER ASSOCIATION*

9:00 – 10:15 **BUSINESS MODELS AND MARKET STRUCTURES FOR PUMPED STORAGE**

- What are the economics needed to make pumped storage a viable business proposition?
- What are the business models required to make these economics work?
- Storage vis-à-vis efficiency from a system-wide and timing perspective; can off-peak storage be monetized for system-wide efficiency benefits?
- Is pumped storage a generation or transmission asset?
- Will utilities sign PPA-equivalents from possible IPP/merchant storage developers? If so what might they look like?
- How can power markets be better structured to monetize storage services?

- Should pumped storage be rate-based for its contributions to load-level, carbon reduction, demand response and grid reliability?
- What project characteristics are needed to make pumped storage projects financeable?
- What policies and incentives are required to commercialize pumped storage projects?

Moderator:

**William H. Holmes**, *Member*, STOEL RIVES, LLP

Panelists:

**John Douglas**, *President and CEO*, Riverbank Power Corp

**David Kates**, *Managing Director*, David Mark & Company; *Consultant*, THE NEVADA HYDRO COMPANY

**Dr. Robert A. Klein**, *Chief Financial Officer; Chief Commercial Officer*, SYMBIOTICS ENERGY, LLC

**Stephane Landry**, *Senior Vice President of Strategy and Market Development*, BROOKFIELD RENEWABLE POWER

**Kevin Young**, *Senior Vice President Strategic Planning – Utility and Energy Services*, THE LOUIS BERGER GROUP, INC.

10:15 – 10:40 *Networking Break*

10:40 – 11:20 **PUMPED STORAGE IN THE NORTHWEST: BPA’S PERSPECTIVES**

There is a growing recognition that additional pumped storage is needed to support increased amounts of wind power and other intermittent renewables being added to the BPA transmission system. BPA has requested \$2 million in grants from the DOE to study use of pumped storage as a tool in balancing uneven power supplies from wind energy. Mr. Jones will share BPA’s viewpoint of adding pumped storage in the Northwest.

**Mark Jones**, *Manager of Federal Hydro Projects*, BONNEVILLE POWER ADMINISTRATION (BPA)

11:20 – 12:00 **CASE STUDY: RED MOUNTAIN BAR PUMPED STORAGE PROJECT**

The Turlock and Modesto Irrigation Districts are in the process of developing the Red Mountain Bar Pumped Storage Project. This presenter will discuss the development strategy that is being followed for the project, including site selection, field and technical studies being performed, and stakeholder relations. He will also discuss the projects’ economic analysis, financing options and the plans to integrate the project into the grid.

**Randy Baysinger**, *Assistant General Manager, Power Supply*, TURLOCK IRRIGATION DISTRICT