

# Capital Costs Analysis Forum—North American Power

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An Advisory Service to help utilities and power generators to better monitor, forecast, and manage costs within their power generation portfolio of projects and to discuss costs from a strategic point of view with regulators and investors.



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## I. OVERVIEW

Access to critical cost information is increasingly important in the power business, especially given the recent trends. Costs that were just a year ago continually soaring above average levels have now started to come down, and our analysis is shifting to investigate how low they might fall, and where the bottom will be. Costs for materials, major components, and to a lesser extent equipment have fallen sharply but likely have further to fall before hitting bottom.

The North American power sector finds itself at a crossroads, with the impact of the financial recession intersecting with a considerably “greener” agenda from the new administration in Washington, DC. These factors are enhancing the downward trend in generating plant development costs, uncovering opportunities in some fuel sources and sounding alarm bells for others.

To address these issues IHS CERA is pleased to announce the *Capital Costs Analysis Forum—North American Power*. This Advisory Service helps utilities and power generators to better monitor, forecast, and manage costs within their portfolio of projects and to discuss costs from a strategic point of view with regulators and investors.

## II. FORUM DESCRIPTION

At the core of IHS CERA’s *Capital Costs Analysis Forum—North American Power* is the Power Capital Costs Index (PCCI), a tool used for monitoring the current state of the North American construction cost environment. The PCCI is similar in concept to the Consumer Price Index (CPI) in that it consistently measures a fixed basket of inputs associated with the construction of a portfolio of 30 power generation facilities in North America. The “virtual portfolio” is a balanced representation of all the major North American Electric Reliability Council regions as well as fuels and technologies (coal, gas, wind, nuclear). The Forum also tracks and reports data on individual markets that drive construction costs such as labor, engineering rates, bulk materials, steel, engineered equipment, and other factors.

The Forum looks into the future using a structured, scenario-based methodology. IHS CERA experts apply their expertise and industry knowledge to frame changes in PCCI values against larger issues such as shifts in industry fundamentals or regulatory shocks described in IHS CERA’s *Global Energy Scenarios* and linked to the North American Gas and Power Scenarios Advisory Service.

### III. FORUM DELIVERABLES

The *Capital Costs Analysis Forum—North American Power* delivers value through two main components.

#### Written Reports (four per year)

##### Power Plant Construction Costs Market Updates (quarterly)

- Track the current state of industry costs using IHS CERA's proprietary indexes
- Analyze the drivers behind changes in industry costs
- Describe the near- and long-term implications of current and forecasted changes in costs
- Provide comparative analysis of cost trends across regions and development types
- Forecast long-term cost trends using a scenario-based process

##### Special Report on Strategic Issues in Construction Costs (semiannually)

A thought leadership piece offering incisive analysis on a topic critical to understanding the current and future cost environment.

#### Workshops

In the spring and fall, Forum members convene for a half-day workshop to discuss the most recent Forum research and to debate the factors influencing long-term cost trends. The results of these debates guide the next round of analysis and modeling.

#### Web Site Access

Members have access to the Forum Web site, which will serve as a reference tool and on which we will post selected research analysis and findings, summaries and workshop proceedings, projects schedules, and logistics information.

#### Telephone Access to Research Staff

Forum members have access to IHS CERA research staff for telephone consultation during normal business hours.

#### Add-on Regulator Package (for an additional fee)

IHS CERA has developed a specific subset of Forum materials suitable for sharing with regulators. Each jurisdiction requires a separate package, and use of each package requires “protective order” treatment by the regulator(s).

#### Market Briefing

One-time, individual access to the Forum research, tailored to meet an immediate, urgent need for the critical data and information that the product provides. This option includes a conference call presentation from IHS CERA's *Capital Costs Analysis Forum—North American Power* research team, plus a PDF copy of the Forum's most recent Market Update.

## IV. BENEFITS OF MEMBERSHIP

The Forum provides members with access to crucial, timely insights on project costs, movements and trends and the strategic implications associated with changes in the global and North American cost environment. By developing and monitoring a set of indicators specifically designed to reflect the critical issues in project development, Forum members will better understand strategic issues such as

- *What is the real versus estimated rate of inflation for large projects?*
- *What is the regional variation in development costs?*
- *How do different generation technology types compare?*
- *How does a firm's specific portfolio of projects compare to the IHS CERA Capital Costs Analysis Forum Indexes?*

## V. ABOUT THE METHODOLOGY

IHS CERA's *Capital Costs Analysis Forum—North American Power* is based on a methodology that derives meaning through the tracking of the “purchase price” of a portfolio of projects. As component costs (e.g., steel, insurance, labor rates) rise and fall, so will the cost of a given portfolio. However, this portfolio-based methodology provides a unique real-world context for the cost picture. What differentiates our approach from a simple basket of components costs such as a CPI is the methodology for calculating the ratio and influence of each component, as follows:

- A representative portfolio of projects is defined.
- Each project is modeled to the equipment level of definition.
- Each project is then “priced” using a multiyear database of industry costs.
- Individual project values are then aggregated into indexes, with the components compared and analyzed.

Using this methodology, IHS CERA answers questions and addresses other issues that require an in-depth understanding of the actual relationship between cost components such as

- *What would be the impact of a 10 percent reduction in capital expenditure in the utility sector?*
- *Which demand signals coming out of the recession will indicate a re-start of postponed development projects?*

## VI. PROJECT TEAM

### Project Director



**Roger Kranenburg, IHS CERA Director**, focuses on serving the needs of global power clients. For the past 20 years he has held senior advisory, policy, advocacy, research and development, product development, program management, technology strategy, corporate development, and business development roles in the energy and wireless telecommunications industries. He has extensive domestic and international experience in the fields of engineering, business, and finance, including investment and commodities trading.

Previously Mr. Kranenburg was the Director of Energy Supply and Taxation at the Edison Electric Institute, where he led policy development and advocacy in a variety of areas including renewable energy, generation investment, and risk management. He was instrumental in the passage of key legislation such as the Energy Policy Act of 2005 and regulations before the Federal Energy Regulatory Commission, the Internal Revenue Service, and the US Treasury. He also represented the United States investor-owned electric utility sector as a keynote speaker and panel chair at more than 75 events and served as a board member for the Power PAC, the US investor-owned utilities' political action committee. His earlier positions include Director of Business Operations, Europe, for Teligent, a wireless telecommunications company, as well as several technical roles directing research and product development for automation systems, microwave telecommunications, and superconductor technology. Mr. Kranenburg has published papers and written articles on topics including renewable energy, energy trading, automation systems, superconductivity, and wireless telecommunications. A CFA Charter holder, Mr. Kranenburg holds an MSc and an MBA from the University of Houston.

### Project Team



**Sergej Mahnovski, IHS CERA Associate Director**, focuses on energy market fundamentals, fuel, and technology choice in the power sector. Dr. Mahnovski's analyses have included the Russian nuclear and coal industries, utilization of associated gas, the role of gas policy on fuel choice in the power sector, and investment in hydropower and aluminum. Prior to joining IHS CERA Dr. Mahnovski was a doctoral fellow at the RAND Corporation, where he researched modeling techniques for decision making under uncertainty and conducted studies on the US refining industry, "smart grids" and real-time pricing of electricity, investment in renewables and fuel cells, and strategies for nuclear nonproliferation, as well as security and economic development issues in Russia, Central Asia, and the Balkans. He was formerly a chemical engineer at Exponent, where he performed risk assessments and intellectual property valuations for clients in the energy and biotechnology industries. Previously, as a researcher at UC Berkeley he studied methods to reduce greenhouse gas emissions from semiconductor fabrication through plasma processing techniques.

## V. PROJECT TEAM (CONTINUED)



**Matthew Konvicka**, *IHS CERA Associate Director, Cost Research*, brings a varied range of experience in both the upstream and downstream industries. In the upstream oil and gas industry he has worked as a facilities engineer and as an engineering consultant for Exxon Company USA, where he performed numerous conceptual design studies for a range of oil and gas projects using Siemens' Oil and Gas Manager software. In the downstream refining industry Mr. Konvicka is an expert in overpressure protection and flare system design. He also pioneered the use of quantitative risk assessment for flare header systems. He holds a BS from the University of Houston and a Masters of Entrepreneurship and Innovation from Swinburne University in Australia.

### Project Advisors



**Candida Scott**, *IHS CERA Senior Director, Costs Analysis Forums*, has established and brought to market IHS CERA's Upstream and Downstream Capital and Power Costs Analysis Forums as well as several regional forums. Prior to joining IHS CERA she most recently focused on cost engineering, field development planning, and conceptual design as well as development of the IHS cost engineering software QUE\$TOR. Previously she was with Halliburton, where she focused on equity participation projects and Brown and Root's FIELDPLAN cost estimating software. A chartered mechanical engineer, she has considerable international consulting experience and for the past 30 years has tracked, monitored, and analyzed trends in offshore, onshore, liquefied natural gas, and downstream construction projects worldwide. Ms. Scott is a member of the IMechE and the Society of Petroleum Engineers and holds a Bachelor of Science degree from Leicester University.



**Jone-Lin Wang**, *IHS CERA Senior Director and Head of Global Power Group*, is an expert on electricity markets, economics, and strategy. Dr. Wang's current research focuses on power industry structure, power market fundamentals, economics of generation options, and the resurgence of nuclear power. Dr. Wang speaks about electric power issues frequently and works with clients on business strategy and market fundamentals. She is an elected member of the Conference of Business Economists. Prior to joining IHS CERA Dr. Wang was Manager of Corporate Strategic Planning at the Electric Power Research Institute, responsible for analysis of industry trends, formulation of business strategies, and assessment of new businesses. Earlier in her career Dr. Wang was a research associate at the Council of Economic Planning and Development of the Taiwan government, where she directed studies on energy modeling and emergency planning. She also taught economics at the University of Southern California. Dr. Wang holds a BS from National Taiwan University and a PhD from the University of Southern California.

## About IHS CERA

**IHS Cambridge Energy Research Associates, Inc.** (IHS CERA), an IHS company, is a leading advisor to energy companies, consumers and industrial companies, financial institutions, technology providers, and governments. IHS CERA delivers critical knowledge and independent analysis on energy markets, geopolitics, industry trends, and strategy. Our services help decision makers anticipate the energy future and formulate timely, successful plans in the face of rapid changes and uncertainty. IHS CERA is valued for our independence, fundamental research, foresight, and original thinking. Our unique integrated framework enables us to offer new insights ahead of conventional wisdom, providing a comprehensive “early warning system” that has a direct impact on investment, decision making, and performance. IHS CERA’s expertise covers all major energy sectors—oil and refined products, natural gas, electric power, renewables, coal, and carbon—on a global and regional basis. We deliver this expertise through our continuous research services, covering more than 20 areas of focus across the energy spectrum, as well as specific consulting and advisory projects. IHS CERA’s team of experts is headed by Daniel Yergin, Chairman and Pulitzer Prize–winning author of *The Prize: The Epic Quest for Oil, Money and Power*. Dr. Yergin is also coauthor of the critically acclaimed book *Commanding Heights: The Battle for the World Economy*.

IHS CERA has over 220 staff worldwide, with offices in Cambridge, Massachusetts; Bangkok; Beijing; Calgary; Houston; Johannesburg; Mexico City; Moscow; Mumbai; Oslo; Paris; Rio de Janeiro; San Francisco; Singapore; Tokyo; and Washington, DC.



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### For additional information regarding

IHS CERA’s *Capital Costs Analysis Forum—North American Power*, please **contact**

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