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## Grid Infrastructure Development - Transmission, Generation, and Renewable Energy

Infrastructure development, market rules, and commercial/contractual agreements share a complex linkage and must therefore be appropriately integrated to ensure effective planning and success with your business objectives. ZGlobal Inc. is exceptionally familiar the Western and California electric grids and understands the impact of various factors such as flow patterns, transmission bottlenecks, load pockets, and constraint areas. Accordingly, ZGlobal Inc. is able to carry out and present:

- Management of large generation Interconnection processes in accordance with the FERC Large Generator Interconnection Process (LGIP).
- System impact studies, including power flow and stability analysis.
- Transmission modeling and sensitivity analysis.
- Analyses of the reliability and economic impact of generation addition, re-powering, and transmission upgrades.
- Compliance audits to ensure that NERC mandatory reliability rules are in place.
- Reviews of the performance of Real Time automatic generation control and the various Energy Management System (EMS) functions.

### Key Steps in Project Development

Perform Initial Feasibility Assessment and Secure Start up financing

- Identify the need for the project
- Identify location, fuel supply, and technology
- Perform high level economic assessment
- Developers need certainty.

Risk and Return

- Financial instruments (bond, hedge bond, etc.)
- Risk aversion
- Capital structure

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- Regulatory risk

#### Project Evaluation

- Cost of capital
- Payback analysis
- Market impact
- Average return on book value
- Internal rate of return (IRR)

#### Project Feasibility

- Contact Utilities / Marketers
- Perform full economic analysis
- Determine business model (energy, capacity, ancillary services, congestion, etc.)
- Prepare responses to RFO's
- Perform various studies (impact, interconnection, etc.)
- Contract negotiation
- Request approval for regulatory bodies

#### Establish a full cost estimate

- Land purchase
- Capital and operating cost
- Credits
- Start up cost
- Sign long term contract

#### Secure Financing

#### Start Implementation

- Complete engineering studies
- Issue an RFP
- Select the vendor

#### NERC Training Experience Overview

Three members of the ZGlobal Inc. team are WECC and NERC certified professionals. The entire team has extraordinary experience in training augmented by a wide range of knowledge and skills as summarized herein. Past experience has involved several aspects of training facilitation within various organizations and has included design of simulators, preparation of training programs, coordination and instruction of training, and introductory supervision with instruction and preparation of new personnel. ZGlobal Inc. team members have lead training coordination for initial training of operations personnel at

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CDWR, coordinated training for PG&E at the start of the operator training program, established the WSCC (WECC) training program, established the PG&E simulator training for dispatch personnel, provided training services through consulting for new programs, and served as instructors for UCSB engineering school extension in areas of hydraulics and hydroelectric power. Our training team is highly skilled not only in training development and delivery methods, but also in real-time operations, maintenance, and control.

### **Renewable and Greenhouse Gas Standards**

Current California law and policies require California utilities and other electricity retailers purchase 20% of their electricity from renewable sources deliverable to the CAISO control area by 2010. Recently, the California PUC approved its December 13, 2006 Proposed Decision (PD) adopting interim Greenhouse Gas (GHG) Emissions Performance Standards (EPS) for new long-term financial commitments to base load generation by all Load Serving Entities (LSEs). The provisional EPS was promulgated in compliance with SB 1368 and serves as a bridge until an enforceable load-based GHG is adopted. The established interim EPS imposes a standard of 1100 pounds of CO<sub>2</sub> per megawatt hour and applies to new ownership investments in base load generation facilities that would extend the life of the facility for 5 years or more, or generation procurement contracts of 5 years or more.

ZGlobal Inc. offers a collection of valuable services that aim to quantify the impacts of these policies on current and planned infrastructure development, energy prices, and portfolio management.

### **Compliance**

Compliance with the various regulatory requirements can be a burden on your company. We believe that the regulatory requirements can and should be streamlined to better the overall effectiveness of the corporation. As an independent third party with the required expertise, ZGlobal Inc. can provide assistance to increase the likelihood that regulatory compliance risks are managed effectively and efficiently within your business.