

Section 2

Energy Policies Supporting Hydroelectric Generation

California and national energy policies and regulations have changed significantly over the past two to three years, and are expected to change even more dramatically over the next several years. The changes stem from growing scientific community consensus on global climate change, public official policies addressing the increasing public health costs of fossil fuel effects on air quality, ongoing petroleum shortages and volatile fossil fuel prices, geopolitical and national security issues related to foreign energy dependence, and political support for California leading the nation toward a “clean energy economy”. These trends have enhanced, and may further enhance, the economics of hydroelectric development in El Dorado County.

This section summarizes current and developing energy policies and programs affecting the feasibility of renewable energy in general and hydroelectric energy in the water sector specifically. The current policy mandates and renewable energy programs are the key reasons why this study focused on hydro options at existing facilities; these policies and programs are the basis for this study’s findings and recommendations.

Overview

Effective February 1, 2008, the CPUC required Pacific Gas & Electric Company (PG&E) to begin purchasing power under standardized agreements from qualifying small hydro projects at water and wastewater facilities. Qualifying projects can be up to 1.5 megawatt (MW) and rates are guaranteed for 10-, 15- or 20-year terms. The guaranteed power purchase rates [i.e., Feed-In Tariff (FIT)] are about 200 percent of PG&E’s Market Price Referent (MPR) during peak energy demand periods in the summer, and about 110 percent during peak energy demand periods in the winter.

The effect of the FIT rates cannot be overstated. While a small hydro project in 2007 may have commanded \$0.09/kilowatt hour (kWh) regardless of the time of day, the PG&E FIT now guarantees about \$0.20/kWh during the peak hours on summer weekdays. Southern California Edison “Feed-In Tariffs” include peak period payments of more than \$0.30/kWh, which reflects the rapidly rising, peak energy demand period value of renewable energy. Additionally, federal and California regulatory exemptions for small hydro projects at existing facilities and hydro project planning, design, permitting, procurement, and power purchase/interconnection agreements allow for the development of small hydro facilities within about 18 months.

Driven by California legislative requirements (AB 32 – Global Warming Solutions Act of 2006) to reduce greenhouse gas (GHG) emissions to 1990 levels by 2020 (about a 30 percent reduction), the CARB is mandated by AB 32 to work expeditiously with the CPUC, CEC, and California Independent System Operator (CAISO) to establish additional regulations that will achieve the 2020 GHG reduction goals. These include additional economic incentives for “small hydro” (up to 30 MW) and other renewable energy resources (e.g., solar, wind, biogas, biomass and biodiesel), economic

disincentives for use of fossil fuels (e.g., “carbon tax”), and proposed new regulations to increase the energy efficiency (including system reoperation) of water and wastewater systems. Also to help meet the GHG goals, California’s electric utilities are mandated to procure 20 percent of their energy supplies from renewable sources by 2010, and 33 percent of their supplies from renewable sources by 2020. Because hydropower is a renewable energy resource that is both non-carbon and dependable (can be dispatched when needed - unlike solar or wind), hydroelectric energy is expected to increase in value into the foreseeable future.

2.1 Current Energy Policy Direction

Legislative and regulatory initiatives are focusing on reducing dependence on fossil fuels. The regulatory focus has been on all major carbon-generating sectors of the economy, differing somewhat between the national and state policies, but overall the emphasis has been on the following themes:

- Reduce greenhouse gas emissions to reduce the effects of manmade contributions to global climate change (“Global Warming”)
- Reduce reliance on fossil fuels and imported fuels for energy production to reduce the negative economic consequences associated with international disruptions in petroleum production (“Energy Independence”)
- Increase limitations on pollutants from energy generation to improve ambient air quality and reduce adverse public health effects and costs (“Public Health Costs”)
- Shift energy policies from near-term, economic-driven decisions to long-term environmental and sustainability-driven decisions (“Clean-Energy Economy”)
- Stimulate the national and California economies with investments, incentives, and jobs in infrastructure to support new (e.g., fuel cell) and emerging (e.g., electric car) industries, including a focus on efficiency in the water industry that is heavily dependent on energy (“Renewables Industry” and “Energy Efficiency”)

2.2 Energy Policy Effects on the Water Sector

Historically, California water policies and regulations focused on water supply, water conservation, and water quality, and have been largely independent of energy policies and regulations. However, because the water industry (including conveyance, treatment, and distribution) uses approximately one-fifth (19 percent) of electricity and 30 percent of non-power plant natural gas in the State (CARB 2008), the water sector is being targeted for regulation from a different angle – namely, energy as it relates to water use efficiency, water recycling, water system energy efficiency, and energy recovery/renewable energy production.

The changing energy policies require new thinking about water supply, conveyance, treatment, distribution, and hydroelectric generation in El Dorado County. How much and what type of energy is used, when energy is used to treat and deliver water, efficiency of conveyance and treatment of current water sources, energy requirements

to convey and treat additional water sources, and energy recovery are becoming increasingly emphasized.

2.3 Hydropower as Key Component of Energy Policy Incentives

Hydropower at existing facilities is being directly promoted (e.g., financial incentives for in-conduit hydro units) as a renewable energy resource. New regulations also are indirectly promoting hydropower through measures designed to penalize carbon-based energy (e.g., the ‘carbon tax’ greenhouse gas reduction measure that is being proposed by CARB staff through its December 2008 Scoping Plan (CARB 2008) measures for carbon-emitting energy sources). Additionally, hydropower facilities have some distinct advantages over other renewable energy developments. For example, the technology is well established so that planning is more predictable and less vulnerable to unknown factors influencing final project installation and operation.

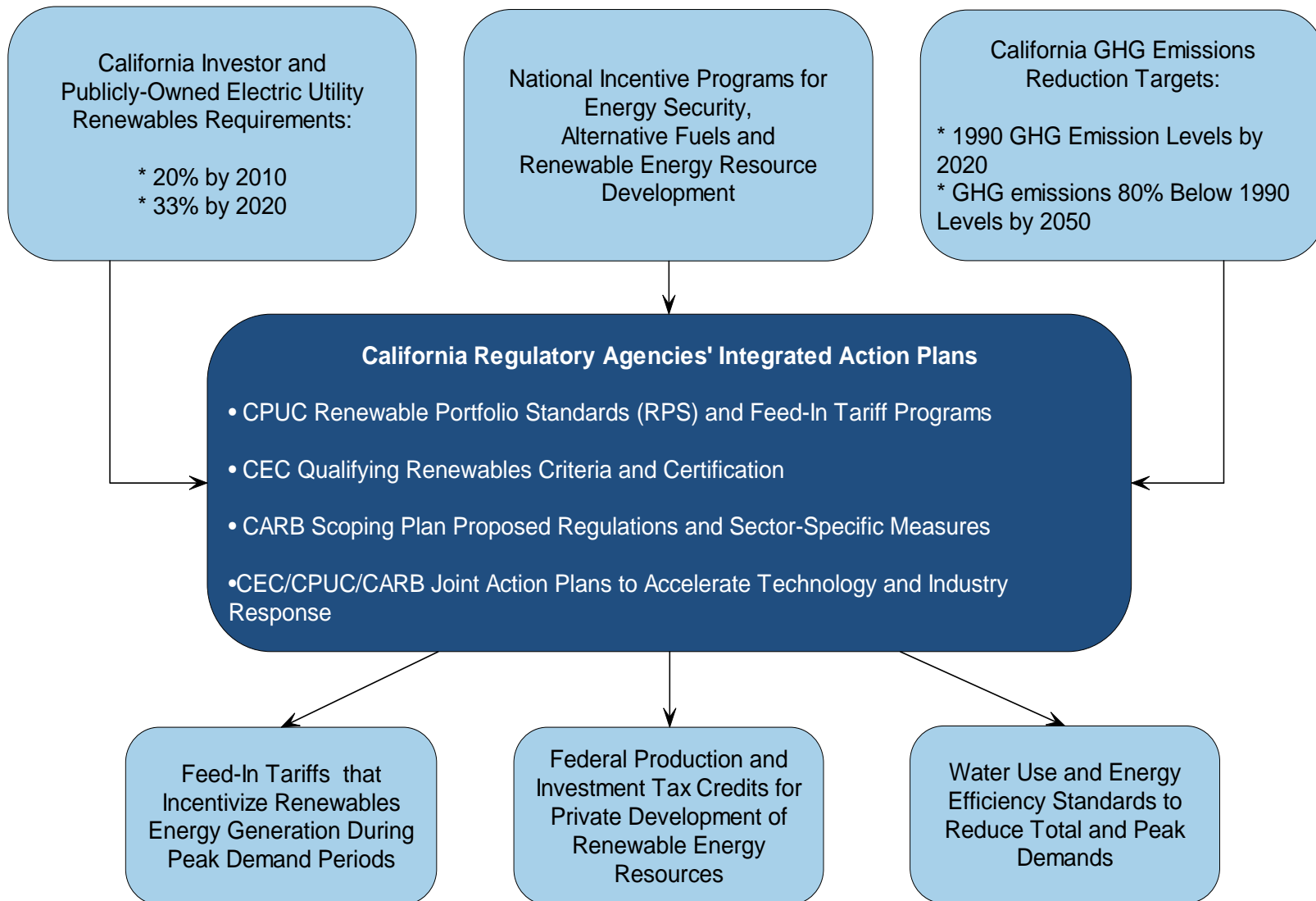
Financial incentives (i.e., “must take” contracts with guaranteed power purchase rates via the FIT program), expedited permitting (e.g., Federal Regulatory Energy Commission (FERC) and state permit exemptions for existing facilities), standardized utility power purchase/interconnection agreements, and other incentives are available today for small hydroelectric development and other renewable energy generation at existing water and wastewater facilities (Figure 2-1). The goals of the incentives for hydropower and other renewable energy resources are to help reduce greenhouse gas emissions by 30 percent from “business-as-usual” levels (i.e., taking into account population growth) by the year 2020. Overall, the program goals are to promote renewable energy resources (including hydro power development), increase the value of non-carbon (e.g., hydropower) energy generation to make it competitive with fossil fuels, and improve water system energy use efficiency and load demand management.

2.4 Role of Renewables Portfolio Standard in California’s Long-Term GHG Reduction Requirements

The CPUC and CEC are jointly responsible for implementing a program [Senate Bill (SB) 107] that targets the State’s Investor Owned Utilities (IOUs) and others to reduce greenhouse gas emissions by mandating electric utility acquisition of required levels of renewable energy. The CPUC July 2008 Renewables Portfolio Standard (RPS) Quarterly Report indicates that a 20 percent goal by 2010 will not be accomplished, but could be accomplished by the 2012-2013 timeframe if identified barriers to project development are removed. Only one of the major barriers (i.e., transmission) applies to the County purveyors’ small-hydro opportunities and only to a few of the most promising alternatives (i.e., Stumpy Meadows).

The CPUC January 2009 RPS Quarterly Report indicates that 2008 was a turning point in the RPS program. During that year, more than 500 MW of new RPS-eligible generating capacity completed construction, representing 60% of the total new construction installed since 2003. Additionally, more than 2,800 MW of RPS contracts were approved by the CPUC in 2008.

Figure 2-1: Key Energy Policy Mandates and Incentives for Hydroelectric and Other Renewables Development



Governor Schwarzenegger's Executive Order S-14-08, issued on November 17, 2008, established an RPS goal of 33% renewable energy by 2020. According to the CPUC January 2009 RPS Quarterly Report, the CPUC is working on a 33% RPS Implementation Analysis that will update renewable resource portfolios, barrier assessment, implementation solutions, and cost impact of the 33 percent RPS requirement.

SB 1368 (Emission Performance Standards), a companion bill to AB 32, limits electric utilities' (both IOUs and public utilities) long-term investments in baseload generation to plants that meet an emission performance standard (EPS) equal to a natural gas-fired combined-cycle plant. This limits the ability of the utilities to contract for generation produced outside the state of California that exceeds the EPS (e.g., coal-fired facilities and less-efficient natural gas-fired facilities) and places an even greater premium on non-carbon generation sources as a part of the utilities' baseload energy requirements.

According to the CPUC's July 2008 quarterly report, the 33 percent RPS goal by 2020 equates to an additional 60 percent increase in renewable energy resources beyond the RPS 20 percent goal. Between 2013 and 2020, this ... "will require an infrastructure build-out on a scale and timeline perhaps unparalleled anywhere in the world." This conclusion recognizes that the most feasible RPS projects ("low-hanging fruit") already will have been developed by the 2013 timeframe.

SB 1038, SB 1078, SB 1250, and SB 107 established specific roles for the CEC and the CPUC and direct the two agencies to work together to implement the RPS. Although the laws assign lead roles for specific implementation efforts to each agency, the roles of the two agencies are interrelated. According to the January 2008 CEC Guidebook on Renewables Portfolio Standard Eligibility (RPS Guidebook, CEC 2008), the CEC is responsible for certifying eligible renewable resources and tracking the procurement of such resources to ensure compliance with the RPS. The CPUC is responsible for establishing targets for the amount of eligible renewable energy resources that retail sellers of electricity must procure to comply with the RPS and verifies compliance with the requirements. Retail sellers include IOUs such as PG&E and electric service providers (ESPs) such as the Sacramento Municipal Utility District (SMUD).

Proposed regulations and policies are now being developed by the CARB and others that, when implemented, will require the County's water purveyors to work with public and private energy utilities toward the long-term goal of stabilizing concentrations of carbon dioxide in the atmosphere by 2050 (Governor Schwarzenegger's Executive Order S-3-05). This goal represents an 80 percent reduction in California's GHG emissions below 1990 levels.

The targeted phase-out of pollution- and carbon-heavy energy generating resources, new carbon cap-and-trade programs, policies supporting development of electric powered cars, converting diesel and natural gas-fired pumps to electric, and the anticipated growth in the County's and State's population will all contribute to an increasing demand for clean electric power at the same time that California is reducing

its in-state and imports of out-of-state fossil fuel-fired electricity. Out of state coal-fired electrical generation alone accounts for close to 15 percent of California's annual energy supply, indicating that a substantial amount of renewable energy resources will be necessary to replace the phase-out of carbon-heavy generation and to meet the growing RPS requirement.

2.5 Hydro Options Eligibility for RPS Feed-In Tariff Program

AB 1969, approved on September 29, 2006, adds Section 399.20 to the Public Utilities (PU) Code. It requires all electrical corporations to file with the CPUC a standard tariff (i.e., FIT) to provide payment for every kWh of renewable energy output produced at an electric generation facility at the market price determined by the CPUC for a period of 10, 15, or 20 years. For purposes of Section 399.20, an eligible generation facility must be an eligible renewable energy resource owned and operated by a public water or wastewater agency that is a retail customer of the electric utility (e.g., PG&E), interconnected and operated in parallel with the utility's transmission and distribution system, and be sized to offset part or all of the electric demand of the public agency.

Section 399.20 limits payment to eligible facilities to a cumulative rated generating capacity of 250 MW statewide. Service will be available upon request on a first-come-first-served basis until the utility meets its proportionate share (i.e., about 105 MW allocated for water and wastewater facilities for PG&E) of the statewide limit.

The RPS Guidebook (CEC 2008) states that to qualify for the FIT program and other renewable energy incentives, an RPS-eligible small hydroelectric facility or conduit hydroelectric facility must not exceed 30 MW and must meet certain other criteria. In addition to a certification/pre-certification applications (see Appendix C, Environmental Regulatory, Permitting, and Feed-In Tariff RPS Certification and Contract Requirements), applicants for small hydroelectric facilities or conduit hydroelectric facilities must complete a supplemental application form and provide additional required information. The requirements are described in greater detail below.

Small Hydroelectric (not conduit)

Generation from a small hydroelectric facility that commences commercial operations or is repowered on or after January 1, 2006, is eligible for the California RPS certification if the facility meets all of the following criteria:

- The facility is 30 MW or less, with an exception for eligible efficiency improvements made after January 1, 2008
- The facility is located in-state or satisfies the out-of-state requirements
- The facility does not "cause an adverse impact on instream beneficial uses or cause a change in the volume or timing of streamflow"

Conduit Hydroelectric

To be eligible for RPS certification, a conduit hydroelectric facility must use for its generation only the hydroelectric potential of an existing pipe, ditch, flume, siphon, tunnel, canal, or other manmade conduit that is operated to distribute water for a beneficial use. A conduit hydroelectric facility may be considered a separate project even though the facility itself is part of a larger hydroelectric facility.

Generation from a conduit hydroelectric facility that commences commercial operations or is repowered on or after January 1, 2006, is eligible for the California RPS if the facility meets all of the following criteria:

- The facility is 30 MW or less, with an exception for eligible efficiency improvements made after January 1, 2008
- The facility is located in-state or satisfies the out-of-state requirements
- The facility does not “cause an adverse impact on instream beneficial uses or cause a change in the volume or timing of streamflow”

Eligible Efficiency Improvements

Eligible efficiency improvements to hydroelectric facilities are limited to those improvements that make more efficient use of the existing water resource and equipment, rather than increase the storage capacity or head of an existing water reservoir. Efficiency improvements do not include regular or routine maintenance activities. Eligible efficiency improvements may include the following measures:

- Rewinding or replacing the existing turbine generator
- Replacing turbines, turbine runners, and nozzles
- Computerizing control of turbines and generators to optimize regulation of flows for generation
- Adding tailwater suppression equipment to permit operation during high flow river stage

The applicant is responsible for showing that its facility qualifies for the RPS. Additional information required of applicants for small hydroelectric, conduit hydroelectric facilities and incremental generation regardless of output is discussed in Appendix C of this report and in RPS Guidebook Section III: Certification (CEC 2008).

Pumped storage

A pumped storage hydroelectric facility may qualify for the RPS if: 1) the facility meets the eligibility requirements for small hydroelectric facilities, and 2) the electricity used to pump the water into the storage reservoir qualifies as RPS eligible. The amount of energy that may qualify for the RPS certification is the amount of electricity dispatched from the pumped storage facility. Pumped storage facilities qualify for the RPS on the basis of the renewable electricity used for pumping water into the storage reservoir, but

the storage facilities will not be certified for the RPS as separate or distinct renewable facilities. A facility certified as RPS-eligible may include an electricity storage device if it does not conflict with other RPS eligibility criteria.

2.6 Federal and State Exemptions for Small Hydroelectric Projects

The FERC has two classes of exemptions for small hydroelectric facilities. One class (“Small Hydroelectric” Exemption) is for projects that are 5 MW or less that will be built at an existing dam, or projects that utilize a natural water feature for head or an existing project that has a capacity of 5 MW or less and proposes to increase capacity. The second class (“In-Conduit” Exemption) is for projects that are 40 MW or less (municipal projects) and that are constructed on an existing conduit that was previously constructed primarily for purposes other than power production and that must be located entirely on non-federal lands (i.e., the generating facility).

The California Environmental Quality Act (CEQA) includes a “Small Hydroelectric Categorical Exemption” (CEQA Guidelines Section 15328) for projects at existing facilities that meet certain criteria (e.g., projects with capacities of 5 MW or less and that do not affect instream flows or special-status species). Both the federal and State exemptions for small hydroelectric projects are discussed in greater detail in Appendix C of this study.

2.7 Ongoing Changes to Existing FIT Program: SB 380 and Additional CPUC Consideration of a Feed-In Tariff

Changes are being evaluated for the existing FIT Program as well as for expanding the program for larger projects to accelerate renewable energy development. On September 28, 2008, SB 380 (Kehoe) amended Public Utilities Code § 399.20. As a result of SB 380, the CPUC is considering modifications to the existing FIT program for generators up to 1.5 MW.

The CPUC staff is now proposing to adopt rules for a FIT for Renewable Generators greater than 1.5 MW. The CPUC Energy Division Staff Proposal (CPUC 2009) considers generators between 1.5 MW and 20 MW, and was made part of the record by the Administrative Law Judge’s Ruling on Additional Commission Consideration of a Feed-In Tariff, filed March 27, 2009. Table 2-1 is from Appendix A of the Energy Division Staff Proposal that compares the existing Feed-In-Tariff program for projects up to 1.5 MW to the staff proposal for the FIT program expansion for projects between 1.5 MW and 20 MW.

For El Dorado County hydro options at existing facilities, potential changes for generators up to 1.5 MW would likely mean increased competition, future reduced rates of the tariffs, “leveling the playing field” for less cost-effective (e.g., wind) qualifying renewable energy sources, and complicating the regulatory process for developing hydroelectric options within the County.

Table 2-1: Comparison between Existing FIT Program and CPUC Staff Proposal to Expand FIT

	Existing FIT program (0 - 1.5 MW)	Staff Proposal for FIT Program Expansion (>1.5 MW to 10 MW)
Program Design Issues		
Utility Applicability	All CPUC jurisdictional IOUs	Only the 3 large IOUs: PG&E, Southern California Edison Company (SCE), and San Diego Gas & Electric Company (SDG&E)
Total Program Size Cap	500 MW	Additional 1,000 MW for all projects in this category
Contract Price	Market price referent	No change
Location Restrictions	Must be an IOU retail customer	Must be within CAISO Controlled Grid
FIT contract terms	Each IOU developed own language based on D.07-07-027	New terms and conditions must be the same across all 3 IOUs
Contract Terms and Conditions		
Length of Time to Achieve Commercial Operation	Within 18 months, with opportunity to extend online date	Within 18 months, with opportunity to extend online date by 6 months for regulatory delays
Excess Sales/Full Export	Projects can choose either excess sales or full export	No choice, all producers must export all energy production
Development Security	None	\$20/kilowatt (kW)
Performance Assurance	None	5% of expected total project revenue for projects (only applies to >5 MW – 10 MW)
Performance Obligation/Energy Delivery Obligation	Utility can terminate contract if deliveries are not made according to good utility practice or prudent electrical practices	Add minimum requirement: 140% of expected annual net energy production based on two years of rolling production
Damage Calculation	Damages are actual direct damages; they are neither calculated by a formula nor capped	Capped damages equal to contract energy price minus average market price for the term year, but not greater than \$0.05 nor less than \$0.02/kWh
Insurance	SCE/SDG&E: \$2 million (>100 kW) PG&E: \$1 million (>100 kW)	No change
FERC Certification	IOUs currently require FERC Certification	Not required

Source: <http://docs.cpuc.ca.gov/efile/RULINGS/99105.pdf>

2.8 Role of Energy Storage in a Renewable Energy Future

The CPUC issued a Data Request on February 18, 2009 for input from stakeholders on Advanced Energy Storage (AES) technologies and the benefits of increased energy storage on both the customer and utility sides of the meters. On March 6, 2009, the CAISO issued a response to this request that included the following regarding pumped storage:

- The increase in the amount of wind generation over the next five to ten years will result in serious mismatch of load and generation in off-peak periods. Energy storage can provide the additional nighttime load that will be essential for capturing the excess production of green energy and to shift the delivery to critical afternoon peak load periods. Pumped storage is listed as the first technology that is capable of achieving the shift in energy loads.
- Smart metering and the development of 'Smart Grid' systems are likely to be key infrastructure requirements. The CPUC should support pilot projects that evaluate the value of such resources to ratepayers.

2.9 Energy Independence for El Dorado County

The El Dorado County Hydro Advisory Panel (HAP) has recommended that, consistent with State and Federal policies, El Dorado County adopt a policy to encourage independence from foreign oil. The following language has been developed through HAP and purveyor meetings on this study to help meet this policy goal:

"It is the policy of the (stated agency) that resources planning and infrastructure, including water and wastewater systems, emphasize renewable energy and energy efficiency toward a goal of Energy Independence for El Dorado County and its citizens."

At the February 24, 2009 HAP meeting, the EDCWA and purveyor staff concluded that the above resolution should be considered for possible adoption by the El Dorado County Board of Supervisors and water purveyors, but that it should first be presented to the EDCWA Board for consideration and possible adoption. In presenting the recommendation, the HAP also suggested the following consideration:

"In support of the County Policy of Energy Independence for El Dorado County and its citizens, we urge EDCWA and its member agencies to vigorously pursue an allocation of hydro power generated at Folsom and Nimbus dams from water originating in El Dorado County for use primarily by public agencies within the County (i.e., County government, schools, special districts, City of Placerville, etc.). This would be in keeping with previous federal government allocation of hydropower to upstream areas on a number of federal projects within the Sierra Nevada region. Such an allocation to El Dorado County would substantially reduce the time required for the County to reach this stated goal of Energy Independence for El Dorado County and its citizens."

2.10 Policy Effects on Hydropower's Future Role in El Dorado County

In addition to developing small hydro at existing facilities, the County's interests also should extend to "small" hydro (up to 30 MW) at new facilities that, in combination with water storage, can increase hydropower generation at existing facilities such as the El Dorado Hydroelectric Project. Because the largest potential renewable energy resources (e.g., wind and solar) are not dependable from an energy contracting perspective, reliable energy resources (such as hydropower generation from reservoirs) must also be acquired to 'firm-up' the non-dependable energy resources. Hydropower with a storage component has the greatest potential (behind nuclear power) to provide dependable, non-carbon energy that can balance increasing proportions of non-firm, renewable energy resources (e.g., wind and solar). As a result, hydropower energy values are expected to exceed those of other renewable energy resources over the long term.

There are tremendous demands for new sources of non-carbon based, dependable electrical energy generation, and that trend is expected to grow given the national policy climate. El Dorado County's purveyors are in a unique position to capitalize on today's opportunities associated with FIT small hydro (1.5 MW or less) and energy load shifting within the existing water systems. Because of the requirements for future sources of dependable, clean energy (at least through 2020), the County's purveyors have a unique opportunity to develop and finance future water supply pumped storage reservoir systems utilizing the value of hydropower generation revenues. As with all legislative or regulatory incentives and mandates, FIT and other incentives may be discontinued in the future. When incentives such as these arise, the window of opportunity should be seized before the window closes.

For the reader's reference, attached is Table 2-2 summarizing existing laws and regulations that are particularly relevant to hydroelectric project development in El Dorado County today. Developing laws and regulations or economic incentives that actively promote hydropower should be continuously monitored.

Table 2-2: Brief Summary of Existing Laws, Regulations and Policies Relevant to Small Hydro Development

AB 1969 - Renewable Portfolio Standards

Requires electrical corporations to file a tariff for purchasing renewable energy from water/wastewater agencies

- Directed the CPUC to establish market price at which renewable energy would be purchased
- CPUC February 2008 Resolution E-4137 set FITs for investor-owned utilities (e.g., PG&E)
- CPUC FIT requires PG&E to purchase/interconnect qualifying facility power under standardized contracts
- PG&E tariff rates range from \$0.06 to \$0.18/kWh for 2008 based on season and time of day
- FITs are adjusted annually and rates are guaranteed for the term of the 10-, 15- or 20-year contract

California AB 32 Global Warming Solutions Act of 2006

Establishes economy-wide cap on GHG emissions at 1990 levels by 2020

- represents an 11 percent reduction from current levels, which doesn't account for growth
- CARB is the lead agency for implementing AB 32 requirements to achieve a "clean-energy economy"
- CARB "must develop a Scoping Plan to lower GHG emissions to reach the 2020 limit"
- Mandatory GHG reduction measures are being developed for each sector of the economy, including water
- CARB proposes 6 GHG measures for the water sector. Four are directly applicable to El Dorado County:
 - > water use efficiency,
 - > water recycling,
 - > water system energy efficiency, and
 - > renewable energy production at water and wastewater facilities
- CARB proposes a "Public Goods Charge" of \$10 to \$50 per water connection to fund GHG measures
- CARB proposes to expand RPS requirements from 20 percent by 2010 to 33 percent by 2020

California SB 1368 Emission Performance Standards

- Prohibits an electricity provider from entering into long-term contracts unless the generation complies with emission standards - regardless of facility location
- Rule is in place with no phase-in
- Also impacts existing generation facilities - capital investments in non-complying existing facilities are limited to routine maintenance

Exec. Order S-3-05 - Governor directive to reduce California GHG emissions to 80 percent below 1990 levels by 2050

CEQA Guidelines Section 15328 - Small Hydroelectric Categorical Exemption

- Exemption applies to projects of 5 MW or less capacity at existing facilities
- Projects cannot affect instream flows or special status species

Public Law 110-140 Energy Independence and Security Act of 2007

- Establishes a grant program for public agency projects that encourage the use of plug-in electric vehicles
- Requires new automobile rating for consumers to compare fuel economy and GHG emissions at purchase

Federal Energy Regulatory Commission Small Hydro (at existing dam) and "In-Conduit" Exemptions

- Small hydro includes qualifying facilities up to 5 MW at existing dam or utilizing a natural water feature
- In-conduit includes qualifying facilities not on federal lands up to 40 MW that are constructed on an existing conduit