

**STATE OF CALIFORNIA
ENERGY RESOURCES CONSERVATION
AND DEVELOPMENT COMMISSION**

**Preparation of the
1996 Electricity Report (ER 96)**)
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**Docket No. 95-ER-96A
March 24, 1999**

**ADDENDUM TO ER 96
ON THE INTEGRATED ASSESSMENT OF NEED
AND ASSOCIATED NEED CRITERIA**

I. INTRODUCTION: NEED CONFORMANCE REQUIREMENTS AND ER 96

The Energy Commission has the exclusive authority to certify thermal powerplants of 50 megawatts or more in California. (Public Resources Code section 25500).¹ As a general matter, in order to certify a plant the Commission must find that it is in conformance with the "integrated assessment of need" (*IAN*) contained in the most-recently adopted *Electricity Report (ER)*. The finding of conformance is made pursuant to criteria (often referred to as "demand conformance criteria," "need criteria," or a "need test") that are also established in the *ER*. (Sections 25305(a)-(f), 25308, 25308.5, 25309(b), 25523(f), 25523.5, 25524(a), 25540.6(a)(5), 25541.)

The Warren-Alquist Act states that the *IAN* is to be "determined pursuant to" a series of statutory provisions that call for:

1. An evaluation of the environmental, economic, and health and safety implications of constructing and operating proposed powerplants and transmission lines (Section 25305(a));
2. A discussion of reasonable alternative technologies (Section 25305(b));
3. Five- and 12-year forecasts of the demand for electrical energy and capacity, considering energy conservation, load management, and other demand-reducing measures (Section 25305(c));
4. An assessment of methods that can reduce the forecasted electricity demand (Section 25305(d));
5. A statement of the level of electrical demand that will reasonably balance:
 - Requirements of state and service area growth and development,
 - Protection of public health and safety,
 - Preservation of environmental quality,
 - Maintenance of a sound economy, and
 - Conservation of resources (Sections 25305(e), 25309(b)); and

¹ All section references are to the Public Resources Code, unless otherwise noted.

6. A discussion of the probable capacity additions consistent with the level of demand (Section 25305(f)).

The heart of the *IAN* is the balancing of the five factors set forth in Section 25309(b) and listed in item 5 above. The analyses of demand, potential demand-reducing measures, and effects of supplies potentially available to meet demand, inform the assessments and balancing of the five factors. As we indicated in *ER 96*, the *IAN* factors remain relevant in today's increasingly competitive electricity market. (*ER 96*, pages 72-73.)

ER 96 is the most recently adopted *Electricity Report*. The integrated assessment of need in *ER 96* recognized that "the state's primary electricity challenge is to develop a fully competitive market among generators and other service providers, without losing the benefits gained from state energy policies in the past twenty years . . . government should not prevent investors from putting their money where they believe the investments will be competitive," as long as the financial risks of the investments are borne by the investors and not by ratepayers. (*ER 96*, pp. 67, 68.) In the current electricity market, new powerplants are being proposed by independent developers, not, as was the case in the past, by investor-owned or municipal utilities whose ratepayers had ultimate financial responsibility. As a result, *ER 96*, like its predecessor *ER 94*, contains a simple test for conformance with the *IAN*:

[D]uring the period when *ER 96* is applicable, proposed power plants shall be found in conformance with the Integrated Assessment of Need (*IAN*) as long as the total number of megawatts permitted does not exceed 6,737 (*ER 96*, p. 72.).

The 6,737 megawatt number was based on a simple comparison of likely demand with potential supplies. (*ER 96*, pages 70-71.) The Commission also recognized that changing circumstances might require revisions to that test:

If during the pendency of *ER 96* the total number of megawatts permitted exceeds 6,737 . . . the *ER 96* Standing Committee shall re-assess the situation and recommend appropriate action for the Commission . . . *ER 98* may be delayed or eliminated. If there is no *ER 98*, then interested persons may petition the *ER 96* Standing Committee to recommend revisions to the need test (*ER 96*, p. 72.).

II. THE *ER 96* STANDING COMMITTEE'S NOVEMBER 5 ORDER

On November 5, 1998 the *ER 96* Standing Committee (Vice Chair Rohy, Presiding Member, and Commissioner Sharpless, Associate Member) issued an order that stated:

Since the adoption of *ER 96*, the competitive market has begun to function, and we now have actual operating experience against which to measure our expectations of how the market might work. In addition, the Commission currently has before it applications for a total of 2,763 megawatts of new power plant capacity, and current information indicates that we may receive applications for as many as 6,360 more megawatts during 1999. Because of the changes in circumstances since the adoption of *ER 96*, it is appropriate to consider revising the *ER 96* need test (November 5 Order, p. 2.).

The November 5 Order directed the Commission Staff to prepare and distribute a paper analyzing options for amendments to *ER 96* and to hold a workshop with interested

participants. The Staff distributed its paper (Options for Modifying the *ER 96* "Need Cap" *IAN* Conformance Test) on November 18 and held the workshop, which was transcribed, on December 2. The Committee also invited interested participants to submit comments on the Staff paper and to propose alternatives.

III. ASSESSING THE FACTORS COMPRISING THE *IAN*

When *ER 96* was adopted, the legislation that restructured the California electricity market had been in effect for less than six months and its implementation was only beginning. Since then, both the Independent System Operator (ISO), which allocates access to most of the state's transmission grid, and the Power Exchange (PX), which conducts a competitive power auction, have been activated; many investor-owned utility powerplants have been divested to independent companies; and a competitive market is beginning to emerge. Although significant details associated with the restructured industry still need to be resolved, we believe that enough is known about the market to justify a re-assessment of the criteria implementing the integrated assessment of need. We do this in order to foster the development of a more robust market, a policy we maintain as central to *ER 96*. We therefore re-assess the five *IAN* factors in Section 25309(b). We do not address the other aspects of the *IAN*. In re-assessing the factors in Section 25309(b), we continue to believe that the most pressing task for state electricity policymakers and regulators is fostering the development of a well-functioning competitive market, a task now impeded by the 6,737 MW cap.

Requirements of State and Service Area Growth and Development

ER 96 found that new powerplants are needed to meet future statewide demand associated with growth and development. Moreover, the *ER 96* assessment maintains that statewide growth and development is dependent upon a well functioning competitive market.

The *ER 96 IAN* used capacity accounting to determine "physical" requirements, i.e., the amount of capacity needed to operate the California system reliably. Yet as the new market has begun to operate, it now appears that (at least under the current market rules, protocols and conventions) generating capacity just adequate to meet the new market's physical demand may not be enough to provide robust competition. The new market structure calls for generators to provide any of a set of differentiated services (e.g., energy for load, and ancillary services including regulation, spinning reserves, nonspinning reserves, and replacement reserves). In the market's first four months of operation, the ISO observed that when generators were able to restrict their bids to only the ISO-required amount of ancillary services, those bidders could take advantage of the lack of competition to raise prices above what would be found in competitive markets. (Frank Wolak et. al., "Preliminary Report on the Operation of the Ancillary Services Markets of the California Independent System Operator," prepared by the Market Surveillance Committee of the California ISO, August 19, 1998, pp. 11 et seq.) The authors note that there are numerous factors contributing to this situation. Although it was not specifically addressed by the authors, one countervailing measure which would reduce the potential for generators to abuse market power is to increase supply.

Another market feature that would help to moderate market power abuse is demand-side bidding: a system whereby consumers could bid a price above which they would not take power. Demand bidding allows consumers to reduce their use during times of high prices. With less demand competing for available supplies, the potential for abuse of market power on the supply side is reduced. The demand-side part of the market is being developed, but it

will not be fully functional for several years. Until there is a robust demand market component, it appears that we must rely more heavily on other mechanisms to insure competitive prices. Naturally, such prices will be fostered only if new generation actually operates competitively.

Protection of Public Health and Safety

Construction of new powerplants does not, in general and at this time, appear to pose a major threat to public health and safety. That is partly because, in powerplant licensing certification proceedings, the Commission reviews potential impacts on public health and safety and environmental quality on a case-by-case basis independent of the *IAN* established by **ER 96**. The California Environmental Quality Act (CEQA) requires the Commission, in its siting case certification proceedings, to mitigate any significant adverse effects on public health and safety resulting from the construction and operation of new powerplants (including both individual and cumulative impacts). Adverse impacts must be mitigated where feasible, and if mitigation is not feasible, the project must provide benefits that outweigh the adverse impacts (Sections 21081; 25519(c)).

Preservation of Environmental Quality

Under CEQA, the Commission must assess not only the significant adverse environmental effects of each new powerplant seeking certification, but also the cumulative effects of the plant in combination with other past, current, and likely future projects (whether powerplant projects or other kinds of projects). (Section 21083(b); CEQA Guidelines, Title 14, Cal. Code of Regs., Sections 15130(b), 15355.)

Although location-specific impacts may vary considerably, regional and statewide air quality (including both regulated air pollutants and non-regulated emissions such as carbon dioxide and other “greenhouse gases”) may be enhanced by the construction of new powerplants. That is because (1) new plants are generally much cleaner and more efficient than existing plants that provide the majority of the state’s power; and (2) most new powerplants are required by law to “offset” their emissions of regulated air pollutants by reducing or shutting down emissions from existing sources. (Neither the offset requirement nor any other legal requirement applies to unregulated emissions such as carbon dioxide and other greenhouse gases.)

With regard to other environmental impacts, as we noted in the previous section, if the Commission finds in any certification proceeding that a plant would cause a significant adverse environmental effect (on air quality or any other aspect of the environment), the effect must be mitigated if feasible, and if mitigation is not feasible the Commission must find that the plant provides benefits that outweigh the adverse impacts. As a general matter, then, construction of new plants must not result in undue environmental impacts and may actually enhance environmental quality.

Conservation of Resources

Applying competitive-market principles allocates resources most efficiently. As previously stated, because new powerplants are generally more efficient than the existing plants whose operation they may displace, construction of new plants with emissions offsets may, in turn, conserve fuel and reduce associated air emissions. Effects on the conservation of other

resources, such as water and land, are less certain, but under CEQA any adverse effects must be mitigated (or outweighed).²

Maintenance of a Sound Economy

Reliable electric service is necessary for a sound economy. Moreover, the power-generation sector of the economy will function most efficiently as a competitive market. Indeed, this factor is one of the principal reasons that the Legislature restructured the electricity market. A driving force behind California's restructuring legislation was the understanding that a competitive generation market would help reduce prices which would thereby enhance the California economy. In general, increasing generation supply will increase competition, although the location and timing of new supplies will be critically important to how beneficial the new supplies are. Likewise, if adding a given new facility would allow a supplier to abuse market power, the addition would not foster a sound economy.

Balancing the IAN factors

The previous discussion indicates that under the current circumstances in California, construction of new powerplants will tend to be either neutral or positive with regard to the IAN factors. Thus, as was the case when *ER 96* was adopted, adding new powerplants serves a balance of the factors, especially in light of the paramount importance of continuing to foster the development of a fully-competitive market -- assuming that the new powerplants are operated competitively. With that determination of the IAN reconfirmed, we now turn to development of appropriate criteria.

IV. OPTIONS FOR REVISED NEED CRITERIA

As previously stated, the fundamental tenet of the *ER 96* need assessment is that, so long as ratepayers do not face financial risks from new powerplants, “government should not prevent investors from putting their money where they believe the investments will be competitive.” (*ER 96*, page 68.) However, until the Commission either revises its existing need criteria or adopts a new *Electricity Report*, the current 6,737 MW need test cap operates as an absolute restriction on the ability of investors to develop new powerplants. The cap was adopted in part because the Commission was not sure how the market would develop. An important concern was whether market incentives would be adequate to entice new entrants. (*ER 96* states that it is “extremely unlikely” that the number of megawatts permitted during the pendency of *ER 96* would exceed 6,737.) Now, in light of our policy to encourage a well functioning, competitive market by removing unnecessary regulatory barriers, and our conclusion that construction of new powerplants will serve to achieve the five IAN factors, there is no justification for retaining the current cap.

² Energy conservation is a special case under the Warren-Alquist Act. The statute states that “[c]onservation, load management, or other demand-reducing measures reasonably expected to occur shall be explicitly taken into account only in the determinations made [on the *ER*'s forecast of electricity demand], and shall not be considered as alternatives to a proposed facility during the siting process” (Section 25305(c).) “[D]emand-reducing measures reasonably expected to occur” are referred to as “Committed DSM” in *ER 96*. By implication, other demand-reducing measures, above those accounted for in *ER 96*, may be considered as alternatives in siting cases.

The Staff's November 18 paper assessed the pros and cons of four options for revising the criteria for determining conformance with the *IAN*. We discuss each one below. *We also discuss an alternative suggested by the Independent Energy Producers (IEP).*

1. Maintain the need cap until the next *ER* is adopted

This option would continue to limit the development of new competitive generation. It may thereby continue to encourage a rush to file applications with the Commission in an attempt to secure certificates before the cap is exceeded, even if the applications are premature or incomplete. All participants in the proceeding appear strongly opposed to this option.

2. Eliminate the need cap until the next *ER* is adopted

This option had considerable support at the workshop. It would eliminate any perception, caused by the current cap, that permits were in scarce supply, ~~caused by the current need cap~~ and might reduce the pressure that developers may feel to file applications quickly with the Commission before the cap is exceeded. However, some participants argued that if the cap were simply eliminated, with nothing to take its place, it might eliminate the link between the *IAN* and the certification of new energy facilities required by Section 25523(f).

3. Modify the cap based on an updated numeric analysis

The *ER 96* need cap was based on an analysis of demand and supply data available in 1994 and 1995. The Commission could update the analysis, using more current data and assumptions, and establish a new cap.

Commission staff and workshop participants found this option undesirable for several reasons. First, even if the cap number increased, investment decisions would still be limited by government rather than made by the market. Second, it would probably take an unduly large amount of time and effort, on the part of both the Commission and market participants, in order to establish a new cap. Third, some of the analytic tools used in *ER 96*, which were developed in order to assess regulated monopolies, may not be appropriate for the current markets in California and the western region. The workshop participants unanimously recommended that we not pursue this option.

4. Modify the rationale for the *IAN* and change or eliminate the cap

We have re-assessed the five *IAN* factors above. Our conclusion is that, generally, construction of new powerplants facilitates the achievement of those factors. ~~Two~~ Three primary approaches for new need criteria reflecting the new assessment were discussed in the proceeding.

a. "Bid Sufficiency" cap: 140% of demand

In light of the observation, by ISO staff, that prices for ancillary services did not begin to appear competitive until generation bids reached at least 140 percent of demand (for ancillary services), one approach the Commission could take would be to find all powerplants in conformance with the *IAN* until the level of statewide supplies reaches that level. However, this approach suffers from two principal problems. First, it may be difficult to determine how "supply equal to 140 percent of demand" should be established. For example, some

ancillary services are needed within specific locations in the state (at least as the ISO currently obtains them). Second, our policy of allowing, to the greatest extent feasible, the market to make powerplant investment decisions militates against any numeric limit.

b. Require case-by-case showings of conformance with the IAN

In another approach under this option, the Commission would find any new plant in conformance with the IAN if the evidence in an individual siting case showed that the plant would foster a net benefit in light of the five IAN factors. That is, the Commission would deem any new powerplant in conformance with the IAN unless, based on the record in an individual siting case, the Commission made a finding that there would be no net system benefit brought about, in whole or in part by the plant. For example, an applicant could demonstrate, that a proposed facility would provide air quality benefits greater than required by law, promote system reliability, or enhance the local economy. Intervenors could also introduce evidence; for example, while an applicant might make a general case that it will contribute to statewide growth and development, there might be local concerns about whether a powerplant's use of emission offsets and water resources would restrict other kinds of development. Or an applicant that owned other powerplants might be challenged to demonstrate why the new project would not contribute to potential abuse of market power.

One key difficulty is deciding how to express the test. We could express it in no more detail than we have here: on balance, does a proposed facility harm or hinder the achievement of the Section 25309(b) factors? That would leave open for each siting case to resolve issues such as defining "harm" and "benefit," determining how each should be measured, and deciding how they should be balanced. That could make siting cases uncertain and open-ended, and thus potentially burdensome to both applicants and intervenors.

On the other hand, if we try to make the test more specific before adopting it as part of an **ER 96** addendum, a potentially even longer and more complicated public process -- with the participation of many parties (including the ISO and municipal utility transmission system operators, for the impacts of a project on the interconnected system are in part determined by the market rules set by system operators) -- would be necessary.

c. Require case-by-case showings of lack of harm to competition and to local reliability

The **ER 96** Standing Committee's most recent proposal was for need criteria embodying a rebuttable presumption that any new powerplant would be deemed in conformance with the IAN; the presumption could be rebutted only by "compelling evidence showing that a plant would significantly harm competition." (**ER 96** Standing Committee January 13/20, 1999 Proposed Addendum, p. 9.) Under the Committee's proposal, the new criteria would go into effect on April 30, 1999. IEP was concerned that the new criteria would take effect before 6,737 megawatts had been permitted and would therefore apply to some plants that previously would have been subject to the unrestricted presumption of IAN conformance established in **ER 96**. IEP therefore suggested that the Commission make any new need criteria applicable only after 6,737 megawatts had been permitted. IEP also suggested that the Commission "articulate a rebuttable presumption that all new powerplants beyond [the 6,737 MW] level are also needed, provided the generation addition enhances competition or local reliability." (IEP, February 8, 1999 Comments, p. 6.)

The Warren-Alquist Act directs the Commission to re-assess its need criteria every two years and this can change regulatory requirements for powerplants before they are permitted. However, in order to provide regulatory certainty, the Commission's regulations state that an **ER**'s need conformance test applies to any AFC that is determined to be data adequate after adoption of the **ER**, unless the Commission by order determines otherwise. (Title 20, Cal.

Code of Regs., Sections 1709, 1720.5.) That rule "grandfathers" the criteria that are applicable to plants found data adequate by the Commission. In the current circumstances, the Commission agrees with IEP that imposing a more restrictive test on a substantial number of powerplants that would have been subject to the unrestricted affirmative finding of conformance with **ER 96** would be inconsistent with the Commission's basic policy of fostering competition in the electricity generation market. We will therefore establish an effective date that more closely corresponds with the potential permitting of 6,737 MW. We also note that by adopting these new need criteria, we are allowing powerplants beyond the 6,737 megawatt limit to be found in conformance with the IAN. Under **ER 96**, such plants could not be permitted, for there was no way that the Commission could find them in conformance with the IAN, regardless of how meritorious.

We will not, however, adopt IEP's proposed substantive test. That test would be substantially more stringent than the Committee's proposal because it would impose an affirmative obligation on applicants to present evidence showing that a proposed powerplant would have positive effects on competition and local reliability. Because fostering competition is, in current circumstances, the most important goal of the IAN, it is best to adopt need criteria that will allow the construction of new powerplants unless there is considerable evidence that they would harm competition.

V. ADOPTED NEED CRITERIA

It is clear that no option is perfect. It is also clear that the current numerical cap is irrelevant in a competitive market. For the reasons we have discussed above, it is inappropriate to select a higher cap number, and there are too many drawbacks to a qualitative "net benefit" test to be performed in each siting case. We believe that, at this time, we can rely on the environmental and other analyses in our individual siting cases, independent of a numerical need criterion, to ensure that the public policy goals embodied in each one of the IAN factors is achieved. Therefore, the Commission hereby establishes a rebuttable presumption, to be applied in every powerplant-certification case during the pendency of this **ER**, or until the Commission takes further action, that the plant is in conformance with the IAN.

However, a key assumption in our determination that new powerplants are in harmony with a balance of the IAN factors is that new plants will operate competitively. Since the restructured market depends substantially on competition for the protection of consumers' interests in acquiring low-cost and efficient generation service, the Commission may consider any compelling evidence, provided by parties to a given siting case, that the proposed facility would significantly harm competition. For example, the ISO might provide data or informed estimates on the expected hours of operation of a proposed facility in relevant market areas, together with information on the number of other facilities in those areas and their ownership; assessments of market power might be constructed; and the facility's effects on competition and market power could be evaluated. Because we firmly believe that in most cases new facilities will enhance competition, we are limiting the need for litigation of this issue by establishing a rebuttable presumption of conformance with the IAN. The burden will be on any party to present compelling evidence showing that a plant would significantly harm competition. If such evidence is persuasive, the Commission would find the plant not in conformance with the IAN.

VI. EFFECTIVE DATE

~~This Addendum should become effective as soon as possible, so that powerplant siting decisions will reflect current circumstances and competitive market needs. In recognition of~~

~~the public interest in having the updated policy decisions in new **ERs** take effect as soon as possible, *As we noted above*, the Commission's regulations state that an **ER's** need conformance test applies to any application for certification (AFC) that is "accepted" (i.e., determined to be "data adequate") after adoption of the **ER**, "unless the Commission by order determines otherwise." (20 Cal. Does Regs. section 1720.5; see also *id.* section 1709.)~~ However, adoption of an **ER** takes place after an extensive public process that generally gives potential siting case participants' several months' notice of the type of decisions the Commission is likely to make. In the current circumstances presented by the Commission's adoption of this **ER 96** Addendum, ~~applicants that have already entered our siting process, and potential applicants such as parties that have filed requests for notice of intent exemptions (see Public Resources Code section 25540.5(a)), should not face rules that have changed unduly quickly~~ it is best to make the new need conformance criteria applicable (1) on a date certain, to provide as much certainty as possible, and (2) only after data adequacy findings for powerplants roughly totaling the 6,737 megawatts deemed in IAN conformance by **ER 96**. Balancing ~~those~~ all the relevant concerns, the Commission orders that this Addendum shall take effect on ~~April 30~~ July 1, 1999, and that the revised need conformance test set forth above shall apply to any AFC determined to be data adequate under 20 Cal. Code regs. section 1709 on or after that date. The revised need conformance test shall remain in effect until a new **ER** is adopted or until the Commission takes action to make further amendments. The Commission intends to adopt a new **ER** or otherwise to consider revising the need conformance test adopted here no later than December 31, 2000.