Comments of the Natural Resources Defense Council (NRDC) on the Committee *Draft 2009 Integrated Energy Policy Report (IEPR)*

Docket Number 09-IEP-1A
October 28, 2009

Submitted by: Sierra Martinez
Lara Ettenson, Peter Miller, Noah Long, David Pettit, Leila Monroe, Adrian Martinez, Helen O'Shea, Amy Mall, George Peridas, Justin Horner, Simon Mui

Natural Resources Defense Council
111 Sutter Street, 20th Floor
San Francisco, CA 94104
415-875-6100

TABLE OF CONTENTS

I. Introduction and Summary

The Natural Resources Defense Council (NRDC) appreciates the opportunity to offer these comments on the California Energy Commission's (CEC) draft *2009 Integrated Energy Policy Report* (IEPR). NRDC is a non-profit membership organization with a long-standing interest in minimizing the societal costs of the reliable energy services that Californians demand. We focus on representing our more than 124,000 California members' interest in receiving affordable energy services and reducing the environmental impact of California's energy consumption.

NRDC commends the IEPR Committee for effectively condensing the results of an intensive public process leading up to this draft IEPR, and appreciates staff's hard work throughout the year. We applaud the overall focus of the draft IEPR on increasing energy efficiency and meeting greenhouse gas (GHG) reduction goals and generally agree with most of the recommendations. We focus our comments primarily on suggested improvements for the final IEPR, expand upon our oral comments presented at the October 14, 2009 Committee Hearing on the draft IEPR, and include a few additional recommendations. Our comments are organized roughly by California's loading order and are summarized in the table of contents.

II. Discussion

1. **NRDC recommends that future IEPRs contain specific chapters on energy efficiency and renewable energy to provide the state with clear analyses and policy recommendations that follow the state's top priority resources.**

NRDC recommends that future IEPRs be organized according to California's loading order to emphasize the importance of the order of resource acquisition. Since the structure of the IEPR lays the groundwork for how the state pursues energy policy, we believe it is beneficial to structure the report according to the state's priorities. In addition, it allows stakeholders to more easily access the important analyses, policies, and recommendations about the state's top priority resources (e.g., energy efficiency, renewable energy, etc.) and ensures that all relevant information on a particular item in the loading order is organized together. This organization will also make the IEPR more user-friendly and maximize the effectiveness of the report in promoting the state's energy policy.

A. Energy Efficiency

Publicly-Owned Utilities (POUs)

NRDC strongly urges that the final IEPR include the following recommendations related to the AB 2021 target setting process. The POUs are currently identifying the energy savings potential in their territories, which will be the basis of the targets they set over the coming year. It is therefore a crucial time for the CEC to give clear direction and guidance to the POUs on this process. As we have noted in previous comments, an open and transparent potential-setting process is imperative to ensuring that the CEC and stakeholders are able to understand *how* the POUs are setting their targets and *if* they are complying with the state law to acquire all cost-effective energy efficiency as their first procurement resource whenever possible. Moreover, a collaborative effort to define expectations up-front can save all parties significant time and increase consensus around the final goals. We strongly urge the Commission to provide clear guidance on improving the POU potential and target-setting during this and all future processes.

1. **NRDC strongly recommends that the POUs set energy saving targets based on a rigorous and transparent assessment of the feasible potential for cost-effective energy efficiency.**

As noted in previous comments, NRDC strongly urges that the POUs work more closely with the CEC and interested stakeholders in preparing the current and future cycle efficiency potential studies and AB 2021 ten-year energy and demand saving targets. We recognize that the previous target setting process was conducted under significant time pressure and therefore urge the POUs to conduct a more rigorous assessment of the feasible potential for cost-effective energy efficiency during this round to ensure that the targets are derived from a thorough analysis.

We offer the following language for incorporation into the final 2009 IEPR and include an excerpt from our "*Analysis of California's Publicly-Owned Utilities' Ten-Year Energy Efficiency Targets"* dated January 9, 2008 (p.3-4) with our recommendations for CEC guidance to the POUs to ensure a rigorous assessment of the feasible potential.

IEPR Recommendation Language

- <u>The POUs should work closely with the CEC and interested stakeholders for this cycle and all future cycles in preparing their efficiency potential studies and AB 2021 ten-year energy and demand savings targets, in order to increase consensus</u>

around the final targets. The CEC should provide clear guidance on input assumptions and on the expectation that every POU is to develop aggressive and transparent energy saving targets.

Excerpt from *"Analysis of California's Publicly-Owned Utilities' Ten-Year Energy Efficiency Targets"*

- Recommend that the POUs conduct **a more rigorous assessment of the feasible potential** when they update their targets in three years, and require that the POUs provide detail on their methodology for determining feasible potential as part of AB 2021's requirement that the POUs provide the Commission with the "basis for establishing [their] targets."
- **Provide clear guidance for improvements to the next potential study** the POUs conduct. There are numerous decisions utilities will make about the analytical framework and input assumptions used to develop their energy efficiency potentials and targets. The Commission should clearly delineate its expectations that the:
  - **cost-effectiveness test** should be the Total Resource Cost (TRC) test;
  - energy efficiency **measure savings and unit costs** should be based on either an existing credible resource such as the Database for Energy Efficiency Resources or other reasonable, documented, assumptions;
  - **avoided costs** should include all cost elements including generation, transmission, distribution, and environmental costs, and should reflect the time-varying value of savings;
  - **discount rate** should be a societal discount rate of 3% real, consistent with the discount rate used by the Commission in evaluating energy efficiency standards, and in no case should be greater than the utility's weighted average cost of capital; and
  - report should include an estimate of the **total net economic benefits** (calculated using the TRC framework) for each utility from achieving the targets.

2. NRDC strongly urges that the final IEPR include a recommendation that all POUs provide details on their methodology for determining feasible potential and targets, as well as an estimate of the total net economic benefits (calculated using the TRC framework) as result of the proposed targets.

In addition to conducting a rigorous assessment, the CEC should ensure that all assumptions associated with the current and future target setting process are fully transparent. Without a full understanding of the target setting process, it is difficult to determine whether meeting or exceeding a target is due to outstanding energy efficiency program implementation or whether the success is due to weak targets. Conversely, it is difficult to determine whether shortfalls are due to lack of performance or to targets that are unrealistic.

We recognize and understand that each utility may need to adjust the general inputs to better suit their particular situation. However, full disclosure of these modifications will enable the CEC and stakeholders to work with the utilities to overcome any potential difficulties in achieving all cost-effective energy efficiency. Without the information from each utility on *if* and *how* they modified the potential inputs to arrive at their feasible potential and therefore energy savings targets, it is difficult for the CEC and stakeholders to assess the methodology, provide assistance if needed during the target setting process, and support the final targets. We offer the following language for incorporation into the final IEPR.

- <u>All POUs should provide details on their methodology for determining feasible potential and targets for every AB 2021 ten-year targets submittal. The POUs should also include an estimate for each utility of the total net economic benefits (calculated using the TRC framework) from their proposed targets alongside the metrics included in the previous AB 2021 report.</u>

3. NRDC urges the final IEPR to include a recommendation that staff develop a working group or series of working meetings to showcase successful energy efficiency portfolio and resource planning approaches as well as to identify solutions to overcome implementation barriers.

NRDC appreciates staff's hard work on the recent POU energy efficiency analysis and the inclusion of the recommendations for the POUs to carry out integrated resource planning and provide information on this effort in the next status report. (p.216) We also acknowledge the progress of the POUs as they continue their efforts to achieve energy savings. However, we are concerned that not all utilities (medium and large utilities as well as the smaller ones) are meeting their targets or developing the types of portfolios that achieve the deep energy savings needed to comply with the law to capture all cost-effective energy efficiency, help the state meet our AB 32 goals, and meet industry standard metrics.

Therefore, we urge the CEC to include an additional recommendation in the final 2009 IEPR that staff establish a working group or series of working meetings to showcase successful energy efficiency portfolio and resource planning approaches as well as to provide a collaborative forum that not only identifies existing barriers, but delves into solutions for overcoming the most significant barriers that POUs face when attempting to capture all cost-effective energy efficiency. NRDC looks forward to being

an active participant in such a forum and provides language below for this recommendation.

- CEC staff should establish a working group that incorporates all pertinent players (e.g., POUs, CEC, stakeholders) to discuss successful energy efficiency portfolio and resource planning approaches as well as to provide a collaborative forum that not only identifies existing barriers, but delves into solutions for overcoming the most significant barriers that POUs face when attempting to capture all cost-effective energy efficiency.

4. **NRDC recommends that the current IEPR recommendation be modified to explicitly indicate that all POUs are expected to have robust and transparent evaluation, measurement, and verification plans and studies by the next status report.**

NRDC supports the current draft IEPR recommendation regarding POU evaluation measurement, and verification (EM&V) studies. (p.216) However, we request that the recommendation be modified to clearly indicate that all POUs are expected to have EM&V plans and studies by the next status report. As noted in previous comments, EM&V is crucial not only to determine whether the utilities achieved their goals, but also to ensure that energy efficiency programs are being designed and implemented in such a way to ensure that the savings can be depended on as a resource. We offer the following language modifications to the current draft IEPR recommendation.

- Each publicly owned utility ~~should continue to~~ is expected to complete robust and transparent evaluation, measurement, and verification studies to show that the energy savings have been realized; and fund these studies consistent with their importance as a significant resource; and report on evaluation, measurement and verification plans, studies, and results in their next annual AB 2021 submittal to the Energy Commission.

Additional Energy Efficiency Comments

5. **NRDC strongly supports the goal of point-of sale (POS) audits and retrofits, and recommends that the CEC also explore other strategies to achieve deep energy savings in existing buildings.**

As noted in the draft IEPR, existing buildings present a challenge to meeting the state goal of achieving 100 percent cost-effective energy efficiency. (p.62) As such, we strongly support the CEC efforts to improve the amount of savings captured by retrofitting existing buildings. NRDC agrees that POS audits and retrofits are a useful approach to reaching existing buildings and recommends that the CEC clearly indicate in

the final IEPR that there are additional strategies that should also be explored to reach savings in existing buildings, especially in light of the recently signed AB 758. These strategies could include performance-based retrofits, improved outreach methods, and other approaches in addition to those mentioned in the draft IEPR. We urge the CEC to also map out the necessary milestones that will enable the state to take advantage of the significant opportunity for energy savings at the time of sale. We offer the following language modification to the current IEPR recommendation (p.215):

- Energy efficiency retrofits should be required at point of sale or point of remodel as one approach in a package of strategies to significantly improve energy efficiency in the existing building stock. CEC staff should develop the necessary infrastructure to ensure that such an approach is successful; including developing incentives such as refunds for inspections or caps on maximum expenditures should be used to avoid dissuading homeowners from selling or making improvements to their homes. Additional strategies should also be explored and closely coordinated with the current utility programs, stimulus fund programs, and the upcoming proceeding directed by AB 758, to ensure a comprehensive and coordinated approach to capturing all cost-effective energy efficiency in existing buildings.

6. NRDC recommends that the demand forecast working group incorporate the issue of embedded natural gas efficiency into their timeline and tasks.

NRDC commends the CEC and staff for its active role in bringing together key players to address the complicated issue of delineating embedded energy efficiency in the demand forecast. We generally support the steps laid out in the draft IEPR and look forward to continuing our participation whenever possible. While we recognize the complex nature and time constraints of the work currently being carried out by the working group, we also reiterate the importance of understanding the amount of embedded natural gas efficiency in the demand forecast in addition to that of electricity efficiency. We therefore urge that the final 2009 IEPR include a recommendation for the demand forecast working group to incorporate into their tasks, a specific goal and timeline to delineate the amount of embedded natural gas efficiency in the demand forecast.

B. Renewable Energy

1. NRDC recommends that to expedite successful implementation of the 33 percent Renewable Electricity Standard (RES)[1], the CEC should prioritize the successful completion of the RETI process together with improvements to the state and federal agency coordination on facility and transmission siting issues. NRDC also recommends that the state pursue legislation to ensure a stable and long-term renewable energy policy framework.

NRDC appreciates the CEC's request for guidance on how to successfully implement the recent Executive Order directing development and adoption of a 33 percent RES. NRDC believes that the final IEPR should clearly prioritize the successful completion of the RETI process together with significantly improved state and federal agency coordination and collaboration on facility and transmission siting issues in order to ensure that California is able to develop and deliver the renewables needed to meet the 33 percent RES. NRDC commends the positive advances that have already been made in this area, but urges a greater and sustained focus.

In addition to the valuable and active CEC participation in CARB's proceedings to develop an RES regulation, we note that legislation codifying the 33 percent RES is crucial to provide a long-term policy framework, allow market participants to make reliable expectations, and send a strong signal of credibility to the market as a whole. Thus, NRDC supports the current draft IEPR recommendations supporting enhanced integrated transmission planning and RETI participation (p.226-227), and urges that the final 2009 IEPR also include a recommendation indicating the importance for the state to pursue legislation to ensure a long-term and stable renewable energy policy framework for California. We offer the following language for incorporation into the final IEPR:

- <u>In order to ensure a long-term and stable renewable energy policy framework for California, allow market participants to make reliable expectations, and send a strong signal of credibility to the market as a whole, the state should pursue legislation to codify the 33 percent renewable energy standard indicated by the recent Executive Order S-21-09.</u>

[1] We use the term RES to indicate a new renewable portfolio standard (RPS) pursuant to the recent Governor's Executive Order S-21-09, distinct from the previous RPS at Cal. Pub. Resources Code § 25740 *et seq.*, Cal. Pub. Utility Code § 399.1 *et seq.*, and subsequent rulemakings.

2. **NRDC urges the CEC to limit the expansion of Feed-In Tariffs (FITs) to 3-5MW instead of the recommended 20 MW.**

While NRDC commends the CEC for pursuing all potential solutions to increase the amount of renewable energy that California acquires, we do not believe that FITs should be expanded to 20 MW projects, as these projects can bear the cost of participating in a bid process and negotiating contracts. Instead, we recommend that FITs be expanded only to projects that are no larger than 3-5 MW and be based on the resource value, rather than on the developers' costs. Projects larger than 5MW are reasonably able to manage the cost of a competitive bid process and should therefore compete under traditional competitive procurement practices.

C. Clean Fossil Fuel Generation/Infrastructure Improvements

Once-Through Cooling (OTC)

1. **NRDC appreciates the active role the CEC has taken in developing the OTC policy and strongly encourages the CEC's continued high level of commitment to and participation in finalizing and implementing the policy.**

We strongly support decreasing the use of OTC technology as a goal for California (p.167) and support the ongoing commitment of the CEC to advise the State Water Resources Control Board (Water Board) on a feasible compliance schedule for the OTC policy. We support the current recommendation in the draft IEPR that the CEC continue to work with the California Public Utilities Commission (CPUC), the California Independent System Operator (Cal ISO), and the Water Board to implement the joint energy agency OTC mitigation schedule while addressing electric system reliability concerns, and encourage the CEC to request the most rapid implementation schedule possible without compromising the integration of renewable energy or grid reliability.

It is crucial that the CEC continue supporting and participating in the implementation of the OTC phase-out policy as this outdated technology has significant negative impacts on our valuable marine resources, and a reasonable phase-out has long been acknowledged as an important effort. Coastal power plants are permitted to withdraw 17 billion gallons of cooling water off of the California Coast daily (p.104) and

kill an estimated 79 billion fish and other marine life annually.[2] Multiple federal and state agencies, (including U.S. EPA, CEC, the California Ocean Protection Council, and the State Lands Commission), have recognized that OTC causes significant, ongoing devastation to our valuable marine resources and undermines significant efforts and funds expended by the State to protect and restore these resources. It has been over 35 years since the Clean Water Act ("CWA") first outlined requirements for power plant cooling technology. We are long overdue for a clear, consistent statewide policy on cooling water technology that protects marine ecosystems and advances greener and more efficient energy production. We offer the following language for inclusion in the final IEPR:

- The CEC and related agencies should push for full and robust implementation of the Water Board's OTC policy as soon as it is finalized. This commitment is important to protect and maintain the ecological, social, and economic value of California's coast and ocean, which depends on maintaining and restoring healthy natural systems.

2. NRDC supports the current draft IEPR recommendation that the CEC should conduct a thorough analysis of electricity generation needs and recommends that the CEC fully analyze the potential to meet those energy needs and replace OTC facilities with minimum fossil resources. In addition, we believe that a proportionate amount of the necessary pollution reductions should come from the electricity sector.

Los Angeles' persistent and deeply rooted air quality problems must be considered as we plan our energy needs. These air quality problems, which impose immense health impacts in the region, require prompt attention and efforts to resolve issues related to electricity generation should not come at the expense of eroding important federal and state law protections. The scarcity of emission reduction credits for particulate matter (PM) has led to issues about the permitting of new fossil-fueled electrical generation in the South Coast Air Basin and elsewhere. Given the South Coast Air Quality Management District (District) lawsuits, in which NRDC is a plaintiff, and the corresponding recently passed legislation, which NRDC finds to be legally questionable, what remains at question is how new Greenfield fossil-fueled power plants will be permitted if needed. As a result, a CEC analysis of how to best meet the South

[2] State Water Resources Control Board, *Scoping Document: Water Quality Control Policy on the Use of Coastal and Estuarine Waters for Power Plant Cooling* (March 2008) p.1. ("2008 Scoping Document"). Available at: http://www.waterboards.ca.gov/plans_policies/docs/coastal_estuarine/scope_doc031808.pdf.

Coast energy needs and replace OTC facilities with minimum fossil resources would be extremely useful.

The NRDC lawsuit argued, and the Superior Court agreed, that the District must conduct a legal environmental review before adopting District rules that enable additional fossil fueled power plants. While we maintain that the District must comply with all appropriate Clean Air Act (CAA) and California Environmental Quality Act (CEQA) requirements before providing permits for additional emissions, we recognize that in some cases the penetration of cleaner and more efficient power plants may improve air quality and reduce the ocean impacts from OTC.[3] Failure to comply with the CAA caused the current problematic situation, because more permits were allocated than should have been allowed under the Clean Air Act. This has significant implications not only for legal compliance with federal law, but also for California's compliance with AB 32. NRDC is committed to working with all involved parties to ensure that air permits are legally allocated in compliance with the CAA and CEQA, pollution from electricity generation is reduced, and OTC is phased out.

In addition, substantial pollution reductions must come from the electric sector. While NRDC strongly supports PM and other pollution reduction measures across all sectors, we discourage the CEC and all other agencies from counting on PM reductions from other sectors to allow for additional permits for electricity generation in the South Coast or any other air basin. We support the CEC's discussion of plans to analyze scenarios to minimize air quality and environmental impacts from electricity generation (p.201-211) and urge that the final IEPR include a recommendation that a proportionate amount of the necessary pollution reductions come from the electricity sector in order to sufficiently clean the air in the basin and achieve Clean Air Act compliance.

NRDC supports the current draft IEPR recommendation that the CEC should conduct a thorough analysis of electricity generation needs. We expect that such an analysis will consider the extent to which OTC facilities can be repowered, replaced, or retrofitted and new generation needs in the South Coast can be met by demand management and non fossil-fueled generation, such that the fossil infrastructure needed

[3] At the same time, all power plants must have legal emissions credits and comply with relevant Clean Air Act requirements.

(and permitted) is minimized. This analysis will enable the region to comply with the Water Board's OTC policy and all CAA requirements.

3. NRDC urges the CEC to refrain from advocating for the wholly disproportionate exemption and recommends against prejudging the ability of nuclear plants to comply with the OTC policy until the required independent analysis of compliance impacts is completed.

NRDC is encouraged to see consideration of the environmental impacts of OTC on the marine environment (p.104) as California ocean habitats are among the most productive and diverse in the world. As such, we strongly discourage the CEC from encouraging application of the "wholly disproportionate" exemption to the OTC policy, which allows for plant operators to make cost-based arguments for non-compliance (p.114). The ocean economy generated about $43 billion for the state in 2000.[4] Uncounted in that number is the enormous contribution oceans make to our quality of life and the high value of coastal real estate. According to a report prepared by the Sea Grant programs, seventy-seven percent of Californians live in coastal counties. California has the highest value ocean tourism and recreation sector in the nation.[5] In a state where the foundation of our economic activity is fueled by the health of our coastal resources, it is crucial to recognize these economic reasons why California must move past this antiquated cooling technology.[6]

While we are sensitive to the need to fully analyze the grid-reliability implications of cooling system changes at some of the OTC plants (particularly the nuclear plants), we do not believe that a cost-benefit analysis is adequate or appropriate because it is likely to

[4] Kildow, Judith T, Charles S.Colgan and Jason Scorse. *State of the U.S. Ocean and Coastal Economies 2009*, National Ocean Economics Program, (2009) at 25, *available at*, http://www.oceaneconomics.org/download.

[5] *Id.*

[6] National Ocean Economics Program, *California's Ocean Economy: Report to the Resources Agency, State of California*, (July 2005), p.1. Available at: resources.ca.gov/press_documents/CA_Ocean_Econ_Report.pdf. Accessed 9.27.09. Finding that "The total GSP of California's Ocean Economy in 2000 was approximately $42.9 billion. California's Ocean Economy directly provided approximately 408,000 jobs in 2000, and almost 700,000 jobs when multiplier effects are included. It provided more than $11.4 billion in wages and salaries in 2000, and more than $24 billion when multiplier effects are included. The NOEP also evaluated the total value of all economic transactions within 19 coastal counties (mainland coast and four additional counties added within San Francisco Bay and the Sacramento River Delta) and identified approximately $1.15 trillion of economic activity, (86% of total state economic activity), that is referred to as the "Coastal Economy." The natural resources of the coast and coastal ocean are a solid foundation for California's economy and these resources must be sustained to maintain the strength in the six sectors evaluated within the Ocean Economy and the much larger Coastal Economy."

undervalue the ocean resources impacted by the plants. Despite the known value of our ocean resources, it is very difficult to fully assess the economic value of our ocean environment, including the marine living resources and the physical processes, to accurately determine the impacts of OTC on these resources. Moreover, traditional benefit analysis also tends to reward facilities in degraded waterways because the benefits are more difficult to accurately calculate due to the significant degradation of marine resources that has already occurred.

NRDC also recommends that the CEC wait to include any comments about the plausibility of nuclear plant compliance with the Water Board's draft OTC policy (p.114) until the independent evaluation that the policy requires of the impacts of compliance is complete. We expect the reports to be highly informative and objective analyses of how the nuclear plants can best reduce their ocean impacts, and we therefore encourage the CEC to remain open to the outcome of that analysis.

Transmission

4. **NRDC commends the CEC for making broad stakeholder engagement a priority and placing significant emphasis on minimizing environmental impacts of transmission planning.**

NRDC is very pleased to see the evolution of transmission planning in California include an emphasis on minimizing environmental conflict and expanding opportunities for broad stakeholder engagement. We also appreciate that the draft IEPR reflects our previous comments on a number of topics including coordination with the RETI process; development of a coordinated, statewide transmission planning process; expansion of opportunities for stakeholder participation in transmission planning; and minimization of environmental impacts of transmission. We look forward to our continued engagement in the ongoing transmission planning process.

5. **NRDC is encouraged to see that land use/environmental concerns are incorporated into the planning process when identifying designated corridors and recommends that the final IEPR provide clear guidance for steps to develop an environmentally sensitive corridor designation process.**

NRDC is encouraged to see that "efforts are already underway" (p. 123) to identify potential environmental and land use concerns early in the planning process and presumes that the RETI process is only one such forum to identify environmental and

land use concerns. If there are additional forums that provide for broad stakeholder engagement and direct dialogue with affected public land management agencies, we recommend that details on such forums, as well as any other efforts related to transmission planning, are included in the final IEPR.

In addition, the importance of corridor designation is appropriately highlighted in the "Transmission and the Environment" section of the draft IEPR (p.122). As noted, the corridor designation process can be used to increase public outreach and involvement and to identify potential land use and environmental conflicts early on. In NRDC's comments on Docket Number 09-IEP-1D dated June 24, 2009, we highlighted the value of corridor designation as a tool for consolidating transmission facilities and minimizing environmental impacts. The RETI process offers very preliminary environmental screens as the *first* step towards siting transmission facilities in least-conflict areas. These screens are not a substitute for the detailed environmental review that is required by both CEQA and NEPA and we therefore recommend that the final IEPR explicitly state that a rigorous CEQA analysis will be a critical step in an environmentally sensitive corridor designation process in California.

6. NRDC appreciates that the CEC has placed an emphasis on removing barriers to joint transmission projects and supports CEC engagement with the newly-convened Transmission Planning Group.

NRDC commends the CEC for exploring the possibility of coordinated, statewide transmission planning. NRDC strongly believes that California must plan for an integrated energy *system* that is aligned with our clean energy goals rather than for a series of individual generation and transmission projects. NRDC also agrees that a critical step in realizing a truly coordinated, strategic transmission planning process in California is removing "legal and market obstacles to joint project development" (p.125)

We therefore support the plans of the IOUs, POUs, and the California ISO to collaborate on using existing rights of way to the maximum extent possible, and reducing environmental impacts of transmission planning. In addition, we believe that the California Transmission Planning Group has the potential to be very helpful in this effort and support any effort of the CEC to engage with this newly-convened body of transmission stakeholders. We also encourage the CEC to more proactively participate in the planning process prior to being engaged by the utilities. Strong collaboration is

critical to creating a framework for an environmentally responsible transmission system for renewable energy.

Natural Gas

7. **NRDC urges the CEC to expand its consideration of environmental impacts of natural gas production beyond shale gas to include all formations of natural gas.**

While we appreciate the CEC's meaningful attention to the environmental impacts of natural gas production, the discussion should not be limited to the impacts of natural gas production from shale formations alone. While 10% of natural gas production in the lower 48 states comes from shale (p.131), it does not appear that California gets much, if any, of its gas from shale. Therefore, it is critical that the final IEPR thoroughly analyze the environmental impacts of non-shale gas production since the impacts discussed in the draft IEPR can occur wherever natural gas is extracted. Moreover, California's demand currently leads to impacts in non-shale formations across the West and therefore is essential that the final IEPR acknowledges those impacts as well. We therefore recommend that the final IEPR include a reference to and discussion of the environmental impacts of all relevant types of natural gas production and the effect that California's demand has beyond our state.

8. **NRDC urges the CEC to include the effects of natural gas production on air pollution in its environmental analysis.**

NRDC recommends that the CEC include air pollution as an environmental impact associated with gas extraction. The draft IEPR currently only includes three environmental concerns: surface disturbance, GHG emissions, and groundwater pollution (p.134). However, air pollution associated with natural gas production, such as emissions of benzene, formaldehyde, xylenes, VOCs, NOx, and particulate matter creates environmental impacts that are equally deserving of analysis and discussion. While NRDC is encouraged that the CEC is analyzing the effects of GHG leakages associated with gas production, GHGs are not the only air pollutants being emitted. Thus, it is critical that the effects of air pollution, beyond just GHG leakages, be covered in the final IEPR.

Carbon Capture and Sequestration (CCS)

9. **NRDC agrees with the CEC's vision that CCS can play a complimentary role to renewable and efficiency, but we recommend that the CEC expand consideration of CCS applications beyond natural gas-fired generation to other types of power generation as well as with various industrial applications.**

NRDC appreciates the treatment of CCS in the draft IEPR and commends the CEC for putting together a balanced and realistic assessment of the technology and its related economic, policy, legal and regulatory needs. We also agree with the CEC that the technological components of CCS (capture, compression, transportation and geologic sequestration) have been tested and proven at large, commercial scale, and that the prime need today is for demonstrations that integrate those components while addressing the main legal, regulatory and policy-related impediments.

However, we reiterate our belief that all cost-effective energy efficiency and renewable energy can and should be pursued before CCS, as the established loading order dictates. The need for deep emission cuts, however, means that CCS can play an important role in the energy mix, enabling very low emission baseload generation which will help to integrate even greater renewable capacity in the system and also displace old, less efficient and higher emitting generation.

The draft IEPR frames CCS mainly as a technology to reduce emissions from natural gas-fired power generation, mainly because of the dominant role of natural gas in California's electricity mix. We agree that this focus is justified, but point out that CCS can be used with other types of power generation as well as with various industrial applications. In addition, CCS could also play a key role in decreasing the emission intensity for electricity that is generated outside and imported into the state - which accounts for 32% of California's electricity (p.2), and includes coal-fired generation. Therefore, we recommend that the final IEPR frame the use of CCS more broadly than just for use with natural gas-fired generation. Other potential CCS applications include reduction of CO_2 from ethanol production, reductions in cement manufacturing, and reductions at refineries – both in operation and potential power generation using petroleum coke (which would displace much higher emissions from its combustion abroad).

10. The CEC should recommend that specific agencies in consultation with stakeholders convene to identify options for clarifying subsurface pore space ownership issues.

Clarifying subsurface pore space ownership is a priority both for the implementation of emission reduction projects, and also for fair treatment and just compensation of the relevant owners for the use of their resource. To expedite the resolution of related issues in a transparent and widely accepted manner, the relevant agencies and stakeholders should jointly identify options for clarifying pore space ownership, its relation to the surface and mineral estate, mechanisms to pool such ownership rights, and compensation for pore space owners. We offer the following language for inclusion in the final IEPR:

- <u>The CEC should identify the appropriate agency or agencies to convene the relevant stakeholders in order to identify options for clarifying subsurface pore space ownership, its relation to the surface and mineral estate, mechanisms to pool such ownership rights, and compensation for pore pace owners.</u>

11. The CEC should recommend that California consider regulatory measures independent of the federal government to ensure that permanent sequestration occurs in enhanced oil recovery (EOR) projects.

While EPA has signaled that it might expand its draft rule on geologic sequestration wells to include sequestration in oil and gas fields, there is no firm evidence of this expansion yet. California should therefore consider its own regulatory measures to ensure that permanent sequestration is indeed occurring in EOR projects that specifically seek to sequester CO_2. We stress that such measures should apply *during* the EOR process as well, and not only "at the conclusion of oil-producing operations." (p.107) NRDC urges that the final IEPR include a recommendation for California to consider regulatory measures to ensure that permanent sequestration occurs in EOR projects, in advance of any federal resolution of the issue and offers the following language for inclusion in the final IEPR:

- <u>The state should consider regulatory measures to ensure and verify that permanent sequestration occurs in all enhanced oil recovery projects as soon as possible, and in advance of any Federal resolution on this matter</u>.

12. NRDC urges the CEC to pioneer a detailed discussion to clearly identify long-term liabilities arising from CO_2 sequestration, but we strongly oppose blanket indemnification.

With regard to long-term "liability" for stored CO_2, we reiterate that there are several statutory and tort liabilities that might arise and that any meaningful discussion of the issue must take place at a far more granular level. NRDC remains strongly opposed to blanket indemnification as a solution to what is essentially a first-mover conundrum. Liabilities serve a valuable purpose in incentivizing sound and diligent operator behavior during the life of a project, and removing them is not justified by the low risks inherent in CCS, which (in EOR and other related industrial activities such as natural gas storage) have been and should continue to be manageable through private insurance or other financial instruments. Therefore, the final IEPR should include a recommendation that the CEC pioneer a detailed discussion of what the component liabilities might be, before recommending any solutions to inadequately-analyzed problems. We offer the following language for incorporation into the final IEPR:

- <u>The CEC should pioneer a detailed discussion to identify all component liabilities in advance of recommending solutions without a thorough analysis on the matter.</u>

We also urge for long-term stewardship to be discussed in the IEPR in its own terms, separate to long-term liability. Conducting monitoring, verification and accounting, as well as maintenance of CO_2 storage sites, is important in ensuring sound projects and assuring the public of their safety and environmental effectiveness. Determining under which body, and under what financial arrangements, this could take place is important for California, as well as the Federal government.

13. NRDC fully supports the call for continued state investment in CCS R&D and demonstrations in tandem with investment by DOE and private industry.

We concur that cost control measures such as safety valves can limit both the environmental effectiveness of cap-and-trade schemes and undermine the deployment of low-carbon technologies, such as CCS. The key task at hand with this technology is to overcome the initial high costs through learning-by-doing and further innovation. We

therefore fully support the call for "continued state investment in CCS R&D and demonstrations in tandem with investment by DOE and private industry."(p.107)

D. Land Use and Transportation

Land Use

1. **NRDC recommends that the final IEPR include a recommendation for the CEC to conduct more concrete research and analysis specifically focusing on land use and energy.**

NRDC is encouraged to see that the CEC is conducting research on the integration of land use and transportation with reducing vehicle miles traveled (VMT) and emissions through PIER and the UC Berkeley Global Metropolitan Center (p.38). However, NRDC urges the CEC to contribute more significantly to the research and analysis needed by local governments. Given that VMT must be reduced at least 17 percent by 2050 (p.37) and that land use is under local jurisdiction, the CEC could contribute most effectively through investing in and conducting research and analysis specifically related to land use and energy. Research on the following topics would greatly assist local governments:

- proper performance measures for energy efficiency in the land use and transportation sector
- an analysis of residential energy use as a function of density
- an analysis of the best unit of geographical measure (e.g., census tract, census block, or traffic analysis zone) that correlates to VMT

We agree with the CEC's emphasis on the important role that land use planning plays in achieving reductions in VMT, emissions, and the need to assist local and regional government in planning and implementing SB 375 Sustainable Communities Strategies. We therefore recommend that the final IEPR include a recommendation that the CEC undertake these concrete research projects.

Transportation

2. **NRDC recommends that the CEC incorporate both federal and state policy drivers in determining the plug-in electric vehicle market in their transportation modeling for the current and future IEPR.**

NRDC appreciates the CEC request for information on how to address the hybrid electricity market. We recommend that the CEC consider (over the 2010 to 2030 time period) both state and federal policy drivers for increased electrification in determining the plug-in electric vehicle (PEV) market, which includes plug-in hybrid electric vehicles (PHEVs) and fully battery electric vehicles (BEVs). The draft IEPR currently states that the CEC expects nearly 3 million PEVs by 2030 (p.155), 2.8 million of which would be PHEVs (p.157), and that Southern California Edison estimates between 0.6 and 1.4 million PEVs by 2020 (p.155), 1.6 million of which would be PHEVs according to the CEC (p.157). These estimates would be improved by including, but not limiting to, the following policy drivers in current and future models:

- California's overall 80% reduction goals;
- EPA and DOT's joint rulemaking (i.e. the National Program) to increase fuel efficiency and reduce global warming pollution from vehicles;
- development of Pavley 2 vehicle GHG tailpipe standards;
- the Low Carbon Fuel Standard;
- federal and state consumer and manufacturing incentives for plug-in electric vehicles; and
- the Zero Emission Vehicle Program.

3. NRDC commends the CEC for using its AB 118 funds to stimulate the electric transportation sector in California.

NRDC commends the CEC for leveraging a total of $46 million of its AB 118 funds to stimulate the electric transportations sector in California (p.165). The majority of automakers are planning to launch one or more plug-in electric vehicle models over the next five years into the U.S. market. California has historically purchased a disproportionately larger fraction of conventional hybrid vehicles and is expected to be one of the primary markets for PEV vehicles. Conventional hybrid sales have increased rapidly over the years by 75% per annum (p. 63, Table 7) and costs will likely continue to fall further for hybrid systems, both as economies of scale in the industry are reached and as battery and component costs are reduced. NRDC appreciates CEC’s involvement and encourages continued support of this emerging market.

4. **NRDC recommends that the CEC include the scenario assessments used in the Low Carbon Fuel Standard (LCFS) Initial Statement of Reasons for both low and high electrification case scenarios in the current and future IEPR.**

NRDC suggests the CEC consider the scenario assessments used in the LCFS Initial Statement of Reasons, which provide a low electrification case scenario, bounded by the ZEV program, and a higher electrification case scenario. The CARB scenarios appear to be reasonable and consistent with the scenario considered by the CEC in the draft 2009 IEPR. However, in the out years (for 2030), most analyses, including those performed by Christopher Yang at U.C. Davis and Joshua Cunningham at CARB, point to increased deployments of PEVs than estimated by the CEC in the draft IEPR, in order to remain consistent with a 80% reduction pathway. The CEC should consider in future IEPRs whether a scenario where the transportation sector (and economy overall) achieves California's 80% reduction goals would be appropriate.

The CEC and CARB should strive to jointly analyze scenarios using the different modeling tool kits at its disposal. For example, as part of the AB 118 process, longer term 80% reduction goals in the transportation sector were analyzed. This work should be compared to the work by CARB, U.C. Davis, and the DOE's National Renewable Energy Laboratory (NREL) to understand the differences and parallels in electrification and fuel efficiency scenarios.

III. Conclusion

NRDC thanks the CEC for the opportunity to comment on the draft 2009 IEPR and for considering our recommendations.

Respectfully submitted,

Sierra Martinez
MAP Sustainable Energy Fellow
Natural Resources Defense Council
111 Sutter St., 20th Floor
San Francisco, CA 94104
smartinez@nrdc.org

Lara Ettenson
Director, CA Energy Efficiency Policy
Natural Resources Defense Council
111 Sutter St., 20th Floor
San Francisco, CA 94104
lettenson@nrdc.org