Comparison of the Consumer Advocate's, KIUC's and HECO's Positions on Distributed Generation (DG) Issues

	Agree	Disagree	No Position	Comments
Planning Issues				
1) What forms of distributed generation (e.g., renewable energy facilities, hybrid renewable energy systems, generation, cogeneration) are feasible and viable for Hawaii?				
(A) DG Definition - DG involves use of small scale electric generating facilities located at or near the load.				
1. "Small" is relative to utility system loads and to the loads of large customers, and the location on the utility's grid. The following generally sets forth the range of values for establishing the upper size limit of a generating facility to be considered as DG (1-2 MW for Hawaii, 6-12 MW for Oahu, 1-2 MW for Maui, up to 1 MW for Lanai and Molokai, 1-2 MW for Kauai).	CA KIUC HECO			* KIUC has no position regarding the magnitude estimates for Hawaii, Oahu, Maui, Lanai and Molokai
2. For purposes of this proceeding, DG is limited to "generating" supply-side resources and does not include DSM	CA KIUC HECO			
3. Generating units not considered DG for this proceeding include:				
(a) "isolated" generating units serving customers not connected to the utility grid; and	CA KIUC HECO			
(b) "emergency" generating units that serve customer load only during period of utility outages, and that are designed such that they are prevented from paralleling with the utility system. Emergency generating units that operate to serve customer load in non-emergency situations (i.e., when there is not a utility outage) are no longer emergency generators and will be considered DG.	CA KIUC HECO			
4. DG output is either recognized by the utility with all other resources as serving all electric system load, or associated with specific customers	CA KIUC HECO			

Comparison of the Consumer Advocate's, KIUC's and HECO's Positions on Distributed Generation (DG) Issues

		Agree	Disagree	No Position	Comments
(B)	DG Feasible and Viable for Hawaii:				
1.	In order for a form of DG to be "feasible and viable for Hawaii", it must be (1) technically feasible, (2) commercially available, (3) economically viable (i.e., cost-effective versus other options), (4) price competitive in the short-term, (5) sustainable in the long-term (i.e., backed up by adequate infrastructure support with respect to O&M and fuel), (6) able to address site-specific constraints (e.g., with respect to permitting) and (7) able to meet the perceived needs of customers. For customer-sited DG applications, the decision to install customer sited generation will be made by the customers, thus customers making up this market will determine whether a form of DG is feasible and viable for Hawaii.	CA KIUC HECO			
2.	The viability and feasibility of available or planned DG technologies is site specific.	CA KIUC HECO			
3	The viability and feasibility of available or planned DG technologies should be analyzed in context of each utility's IRP, to the extent practicable.	CA KIUC HECO			
2) Who should own and operate distributed generation projects?					
(A)	DG projects, whose output is included by the utility with all other resources to serve entire system load, should be owned and operated by:				
1.	For Substation-sited DG				
	(a) utilities only	CA KIUC HECO			
	(b) third party vendors only		CA KIUC HECO		
	(c) utilities or third party vendors		CA KIUC HECO		
2.	For Customer-sited DG				
	(a) customers or third party vendors/equipment lessors only		CA KIUC HECO		

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Comparison of the Consumer Advocate's, KIUC's and HECO's Positions on Distributed Generation (DG) Issues

				Agree	Disagree	No Position	Comments
			(b) utilities, third party vendors/equipment lessors or customers	CA KIUC HECO			* With KIUC right of first refusal on Kauai.
	(B)		Utility participation in customer-sited DG projects should be permitted, provided that:				
		1.	the utility's participation is in a manner that is not unduly or unreasonably preferential, discriminatory or anti-competitive	CA KIUC HECO			

Comparison of the Consumer Advocate's, KIUC's and HECO's Positions on Distributed Generation (DG) Issues

	Agree	Disagree	No Position	Comments
2. the utility's participation is:				
(a) offered as a regulated utility service; or	HECO		CA* KIUC	*CA takes no position on whether it is regulated or unregulated, it could be either, but prefers regulated.
(b) offered through an unregulated subsidiary of the utility		HECO	CA* KIUC	*CA takes no position on whether it is regulated or unregulated, it could be either but prefers regulated.
3) What is the role of the regulated electric utility companies and the Commission in the deployment of distributed generation in Hawaii?				
(A) The utilities should				
1. plan for and facilitate deployment of DG through the IRP process by evaluating the cost-effectiveness of DG resources for inclusion in the utilities' resource plan.	CA KIUC HECO			
2. offer CHP systems as a regulated service under circumstances where cost-effective and not burdensome to non-participating customers	HECO		CA** KIUC*	** consistent with the above, CA is not advocating that the CHP systems be offered solely as a regulated service. * KIUC has no current plans to offer CHP systems. KIUC is undecided whether such systems, if so offered by KIUC, should be offered as a regulated or unregulated service. However, KIUC agrees that, if so offered, it should be cost-effective and not burdensome to non-participating customers.
3. identify specific areas or types of areas where DG is needed or could be most beneficial, to the extent practicable.	CA KIUC HECO			

Comparison of the Consumer Advocate's, KIUC's and HECO's Positions on Distributed Generation (DG) Issues

				Agree	Disagree	No Position	Comments
	(B)	The Commission should:					

Comparison of the Consumer Advocate's, KIUC's and HECO's Positions on Distributed Generation (DG) Issues

				Agree	Disagree	No Position	Comments
			require each utility to develop and have cost of service information and apply appropriate tariffs that result in a DG 1. customer being served at a cost that is not subsidized by non-DG customers	CA KIUC HECO			

Comparison of the Consumer Advocate's, KIUC's and HECO's Positions on Distributed Generation (DG) Issues

	Agree	Disagree	No Position	Comments
2. require each utility to consider DG in the utility's IRP cycle and implementation plans	CA KIUC HECO			
3. require each utility, to consider a competitive procurement process for utility-owned DG	CA KIUC HECO			

Comparison of the Consumer Advocate's, KIUC's and HECO's Positions on Distributed Generation (DG) Issues

	Agree	Disagree	No Position	Comments
Impact Issues				
4) What impacts, if any, will distributed generation have on Hawaii's electric transmission and distribution systems and market?				
(A) The potential positive impacts of DG are:				
1. increased reliability (see Item 5), defer or avoid T&D upgrades, defer addition of large central generating units, reduce system losses, lowest reasonable rates to customers, provided that	CA KIUC HECO			
(a) DG is planned and implemented in the context of the utility's IRP	CA KIUC HECO			
(b) the utility considers the use of a competitive procurement process for utility-owned DG	CA KIUC HECO			
(c) the utility's rates are such that, on a case-by-case basis, the implementation of DG will not cause the remaining customer base to subsidize DG.	CA KIUC HECO			
(B) The potential negative impacts of DG are:				
1. loss of revenues to cover fixed costs if DG not utility owned	CA KIUC HECO			

Comparison of the Consumer Advocate's, KIUC's and HECO's Positions on Distributed Generation (DG) Issues

	Agree	Disagree	No Position	Comments
5) What are the impacts of distributed generation on power quality and reliability?				
(A) In order to avoid any substantive adverse impact on power quality, the DG must:				
1. be interconnected to the grid in accordance with utility-approved standardized interconnection requirements,	CA KIUC HECO			
2. which requirements should be updated to meet applicable current IEEE standards,	CA KIUC			
3. and meet applicable IEEE standards and be certified by the UL or other certification entities, to the extent practicable.	CA KIUC HECO			
(B) The impact of DG on reliability relates to:				
1. whether the DG is operated or controlled by the utility	CA KIUC HECO			
2. is dependent upon location specific issues	CA KIUC HECO			
(C) If DG is implemented in accordance with applicable standards and interconnection requirements:				
1. reliability should be improved, not degraded, because of the deployment of DG in Hawaii	CA KIUC HECO			
2. differences in operational features between DG technologies (i.e., firm versus as-available) need to be taken into account.	CA KIUC HECO			

Comparison of the Consumer Advocate's, KIUC's and HECO's Positions on Distributed Generation (DG) Issues

	Agree	Disagree	No Position	Comments
6) What utility costs can be avoided by distributed generation?				
(A) Costs that can be deferred or avoided by DG include:				
1. costs associated with new generating units, avoided line losses, and T&D upgrades	CA KIUC HECO			
2. provided that DG is installed in the context of the utility's IRP plan	CA KIUC HECO			
3. and a competitive procurement process is utilized for utility-owned DG	CA KIUC HECO			
(B) The utility costs avoided by DG are dependent on:				
1. the specific nature of the area's T&D system and the ability to site DG there, and	CA KIUC HECO			
2. the number and diversity of installations, their reliability, ability of non-utility owned/operated to coordinate operation and maintenance with the utility, and their sustainability;	CA KIUC HECO			
3. noting, however, that such avoided cost benefits may be offset by the utility's loss of revenue recovery of fixed costs.	CA KIUC HECO			

Comparison of the Consumer Advocate's, KIUC's and HECO's Positions on Distributed Generation (DG) Issues

	Agree	Disagree	No Position	Comments
7) What are the externalities costs and benefits of distributed generation?				
(A) The potential externalities benefits from DG are:				
1. reduction in fossil fuel use and emissions from non-fossil fuel or combined heat and power DG	CA KIUC HECO			
2. conservation of water	CA KIUC HECO			
3. energy security	CA KIUC HECO			
4. ability to match load growth with new DG rather than large increments of central station power	CA KIUC HECO			
5. ability to meet specific customer needs with smaller resources	CA KIUC HECO			
6. the ability of DG to switch quickly to new technology compared to large generating units	CA KIUC HECO			
7. the ability to improve reliability	CA KIUC HECO			
(B) The potential externalities costs that can result from DG include:				
1. loss of economy of scale of large generating units	CA KIUC HECO			
2. increased fuel use and emission from less efficient fossil fuel DG	CA KIUC HECO			

Comparison of the Consumer Advocate's, KIUC's and HECO's Positions on Distributed Generation (DG) Issues

	Agree	Disagree	No Position	Comments
3. air emissions, noise and visual impact of DG located in close proximity to customers	CA KIUC HECO			
4. performance and safety risks of DG not under utility ownership, operation and control	CA KIUC HECO			

Comparison of the Consumer Advocate's, KIUC's and HECO's Positions on Distributed Generation (DG) Issues

		Agree	Disagree	No Position	Comments
(C)	Externalities costs and benefits:				
1.	should be considered as an integral part of the analysis conducted of DG,	CA KIUC HECO			
2.	DG should be subject to the same scrutiny, analysis and quantification as would any other supply-side resource or DSM measure,	CA KIUC HECO			
3.	should be evaluated in the utility's IRP planning process.	CA KIUC HECO			
8) What is the potential for distributed generation to reduce the use of fossil fuels?					
(A)	Depending on the type of DG technology and site-specific factors, DG can reduce the use of fossil fuels in a number of ways:				
1.	Certain types of DG technology rely on renewable resources to generate energy (e.g., solar energy (photovoltaics), wind turbines and hydro).	CA KIUC HECO			
2.	DG in most cases will reduce delivery system losses	CA KIUC HECO			
3.	DG that also serves thermal load, such as CHP facilities, can do so at an overall higher efficiency resulting in a reduction of fossil fuel use	CA KIUC HECO			

Comparison of the Consumer Advocate's, KIUC's and HECO's Positions on Distributed Generation (DG) Issues

	Agree	Disagree	No Position	Comments
Implementation Issues				
9) What must be considered to allow a distributed generating facility to interconnect with the electric utility's grid?				
(A) A number of factors may be considered in making the determination, including the:				
1. party that will own the facility;	CA KIUC HECO			
2. party that will operate the facility;	CA KIUC HECO			
3. current industry DG design, installation and operation practices, and whether the facility will meet or exceed those practices.	CA KIUC HECO			
4. utility interconnection and operational requirements and whether the facility will meet or exceed those requirements	CA KIUC HECO			
5. applicable National Electric Code (NEC), Institute of Electrical and Electronic Engineers (IEEE) standards, and American National Standards Institute (ANSI) standards, and whether the facility will meet those standards;	CA KIUC HECO			
6. approval of applicable certification entities, such as the Underwriters Laboratory (UL), for the facility and its subsystems and components; and	CA KIUC HECO			
7. compliance with State and site-specific siting approvals and building and fire safety codes.	CA KIUC HECO			
(B) Each utility should have Commission approved interconnect standards and agreements to qualify or approve DG facilities for interconnection with the utility's grid.	CA KIUC* HECO			* KIUC is in the process of developing these standards
(C) The ownership structure of the utility (cooperative versus investor-owned) must be taken into account	CA KIUC		HECO	

Comparison of the Consumer Advocate's, KIUC's and HECO's Positions on Distributed Generation (DG) Issues

		Agree	Disagree	No Position	Comments
10)	**What is the appropriate rate design and cost allocation issues that must be considered with the deployment of distributed generation facilities?**				
(A)	Cost Allocation Issues				
1.	The cost of service (i.e., T&D, ancillary services, etc.) provided to DG customers would be identified and quantified in a cost of service study for each utility	CA KIUC HECO			
2.	The level of effort and detail for the cost of service study should be balanced with the information available, the cost of developing additional data, and the magnitude of the DG market and its impact on the utility's revenue recovery and revenue stability.	CA KIUC HECO			
(B)	Rate Design Issues				
1.	Intra and inter class subsidies between customers in a rate class and between rate classes cause loss of revenue issues and an adverse impact on the remaining customers' rates.	CA KIUC HECO			
2.	A tiered-rate system (where increasing levels of usage are billed at higher rates), combined with a low customer charge, could be implemented to encourage DG.		HECO	CA KIUC	
(C)	Existing utility bundled rates				
1.	should be supported by a cost of service study such that DG customers compensate the utility for the costs of services provided;	CA KIUC HECO			

Comparison of the Consumer Advocate's, KIUC's and HECO's Positions on Distributed Generation (DG) Issues

	Agree	Disagree	No Position	Comments
11) What revisions should be made to the integrated resource planning process?				
(A) DG must be included in each utility's IRP cycle and implementation plans				
1. No changes to the IRP Framework are required for the consideration of DG.	CA KIUC HECO			
2. An individual DG project is also generally too small to impact the timing of central station units or transmission line timing. In order to complete a fair evaluation, an aggregate forecast of DG resources must be considered.	CA KIUC HECO			
(B) The types of DG to be included in the five-year action plan:				
1. are those that are commercially viable at the time that the plan is developed, and considered to be suitable for use in Hawaii,	CA KIUC HECO			
2. new technologies can be incorporated in the development of the utility's next IRP so as not to interrupt the implementation of the five-year action plan in the Commission approved IRP.	CA KIUC HECO			

Comparison of the Consumer Advocate's, KIUC's and HECO's Positions on Distributed Generation (DG) Issues

	Agree	Disagree	No Position	Comments
12) What revisions should be made to state administrative rules and utility rules and practices to facilitate the successful deployment of distributed generation?				
(A) Revisions to the following existing administrative rules may be required:				
1. HAR6-61-Rules of Practice and Procedure before the Public Utility Commission;			CA KIUC HECO	
2. HAR6-74-Standards for Small Power Producers and Cogeneration; and			CA KIUC HECO	
3. Title VII, General Order No. 7, Standards for Electric Utility Service in the State of Hawaii.			CA KIUC HECO	
4. It may be appropriate to develop a specific administrative rule for DG.			CA KIUC HECO	
(B) The Commission should				
1. approve the HECO Utilities' proposed CHP program and CHP tariff, and expeditiously review and	HECO		CA* KIUC	*CA takes no position because the matter is to be decided in Docket No. 03-0366
2. approve applications for individual CHP projects under Rule 4 of the HECO Companies' tariffs.	HECO		CA* KIUC	*CA takes no position because the matter is to be decided in Docket No. 03-0366
(C) In order for the utilities to participate in customer-sited DG, the review and approval processes need to be streamlined.				
1. Standard form contracts should be adopted	CA KIUC HECO			
2. Tariff structures for DG should be implemented	CA KIUC HECO			
3. The process of demonstrating rate payer benefits should be standardized for each utility, taking into consideration, among other things, the ownership structure of the utility (cooperative vs. investor-owned)	CA KIUC HECO			
(D) Fuel cost recovery methodologies:				

Comparison of the Consumer Advocate's, KIUC's and HECO's Positions on Distributed Generation (DG) Issues

	Agree	Disagree	No Position	Comments
1. should be revised to accommodate DG.	CA KIUC HECO			