## OREGON PUBLIC UTILITY COMMISSION

#### Docket No. UM-1690 Voluntary Renewable Energy Tariffs

COMMENTS OF Letha Tawney, Sr. Associate at World Resources Institute

I respectfully submit comments in response to the draft VRET Models Table circulated by the Commission Staff on July 8, 2014. As requested by the Staff, I have populated the draft models table with its comments on individual elements of that table. The populated table is attached as an appendix to these overview comments. Here, I briefly summarize the main principles and considerations underlying those comments.

As described below, enabling utilities to offer Voluntary Renewable Energy Tariffs ("VRETs") can reasonably be expected to produce substantial public benefits, notably by encouraging the development of renewable energy and attracting large, sophisticated business customers in the technology and other sectors, who are actively seeking out renewable energy supplies and who often have the ability to shift operations, employment, and energy consumption among locations readily. By adding, or retaining, a significant customer base in the Oregon electricity system, VRETs can also strengthen the offering utilities and potentially independent generators financially, to the benefit of non-VRET customers as well.

## I. Letha Tawney and Her Role in this Proceeding

Letha Tawney is an expert on renewable energy deployment and a Senior Associate at the World Resources Institute (WRI). WRI is a global, non-profit research organization that is actively engaged in more than 50 countries around the world in seeking, among other things, to collaboratively develop and advance transformative solutions that will increase affordable access to clean energy.<sup>1</sup> In a working paper dated January 2014, I described certain of benefits of "green tariffs" in promoting the development and use of renewable energy resources.<sup>2</sup> I have participated actively in this proceeding, by, among other things, serving on one of the panels of the Phase I workshop conducted on June 26, 2014.<sup>3</sup>

# II. Considerations Underlying Comments on Draft Models Table

The Commission study mandated by Section 3(a) of HB 4126 is to consider, among other things:

- (a) whether allowing utilities to offer voluntary renewable energy tariffs
  ("VRETs") will promote further development of significant renewable resources;
- (b) the effect of VRETs on the development of a competitive retail market;
- (c) any impact, including potential cost shifting, on other customers;
- (d) whether utilities should rely on a competitive procurement process to obtain the energy sold under their VRETs; and
- (e) any other relevant considerations.

# A. <u>Promotion of Renewable Energy Resources</u>

As evidenced by the support from potential VRET customers in this proceeding, VRETs could provide a significant additional option for buyers seeking renewable energy. The existing options, notably, self-generation and direct purchases from independent power producers, will remain available to customers. Similarly, VRETs could offer a potentially efficient, and thus

<sup>&</sup>lt;sup>1</sup> See http://www.wri.org/our-work/topics/energy.

<sup>&</sup>lt;sup>2</sup> See http://www.wri.org/publication/green-tariff-design.

<sup>&</sup>lt;sup>3</sup> These comments have been prepared with the pro bono assistance of Nicholas Fels and Richard Herzog, attorneys at law.

attractive, method for independent power producers, particularly smaller ones, to market their renewable output.

By enabling willing "green" buyers to purchase renewable energy produced by willing "green" sellers -- so long as there are no adverse external effects – VRETs can expand the use and development of renewable energy, when compared to the otherwise-identical case in which that option is precluded.

In particular, by aggregating supply, and / or possibly reducing transaction costs by simplifying access, utility offerings of renewable energy under VRETs may attract demand that is incremental to what would obtain in the "no-VRET" case. Customers have cited transaction complexity as one barrier to meeting their renewable energy goals in general.<sup>4</sup> This incremental demand for renewable energy could be expected to call forth additional supply, some, if not all, of which could be independently owned. Thus, renewable energy sold under a properly structured VRET (see below) could be expected not merely to displace quantities of renewable energy supplied by independent power producers today, but significantly to increase such quantities.

## B. Effect on Competitive Markets

With respect to anticompetitive effects, it seems most useful here to consider whether and the extent to which implementation of a VRET would increase the <u>incentives</u> or <u>ability</u> of a utility to behave anticompetitively, in comparison to the case in which no VRET could be offered. In other words, would the VRET make uncompetitive outcomes more likely, when compared with the "no-VRET" case?

<sup>&</sup>lt;sup>4</sup> See Corporate Renewable Energy Buyers' Principles at

http://www.wri.org/publication/corporate-renewable-energy-buyers-principles.

Keeping this principle in mind as the VRET is designed can avoid impacts on competitive markets. If, and to the extent that, there are deemed to be flaws in current regulations applicable to retail competition, these flaws can and should be addressed separately, in proceedings relating to the overall competitive retail market, including the renewable energy segment of that market. They need not delay or preclude the environmental and other public benefits to be derived from VRETs.

## C. Impact, Including Cost Shifting, on Other Customers

Implementation of a VRET need not shift costs to utility customers who take service under other tariffs. Eligible existing customers who choose to purchase under a VRET will continue to take transmission and distribution service from their present provider of such service, and, under carefully designed tariffs, will continue to bear their share of the utilities' transmission and distribution costs. To the extent that fixed costs of non-renewable generation were properly incurred in anticipation of serving those customers, those costs should be recoverable by the utility from such customers, presumably as a component of the VRET rate. The identification and calculation of such costs can be undertaken in individual tariff proceedings. If rapid growth of the VRET is a concern, other utilities with VRET-like products have included overall size limitations and reviews when those limits are reached to evaluate further expansion.<sup>5</sup>

# D. <u>Competitive Procurement of Power Sold under VRET</u>

To assure that the power sold under a VRET reflects the underlying costs of available renewable energy resources, utilities should be required to acquire such power by means of a

<sup>&</sup>lt;sup>5</sup> See the WRI submission of June 17, 2014 to this proceeding for examples of other VRET-like products in other jurisdictions.

transparent competitive procurement process. Such a process could even include demand as well as supply in order to address the challenges of price discovery. Thus, customers wishing to purchase under a VRET for a specific period would bid in the respective amounts of renewable energy they are seeking, and the price (or prices) they are willing to pay for those amounts. Suppliers would bid in the amount of renewable energy they are offering and the price (or, for different blocks of supply prices) they would accept. The price at which supply and demand balance for a given period would be the market-clearing price.<sup>6</sup>

If the VRET procurement process is carefully structured, renewable resources owned by utilities, utility affiliates, or even customers could be eligible to bid. Inclusion of such resources could expand the potential supply of renewable energy, spur competition, and promote overall efficiency.

# E. Other Considerations

Large, sophisticated, and energy-intensive businesses are increasingly drawn to renewable generation as the preferred source of power for their operations.<sup>7</sup> They perceive advantages in avoiding fuel-price volatility and in having access to renewable energy from projects near their facilities. They also emphasize the importance of having choice among

<sup>&</sup>lt;sup>6</sup> The price resulting from this process would be for acquisition of the renewable energy itself. In calculating their bids, customers would have to take into account other elements of the utility's charge, notably transmission, distribution, and back-up power. Similarly, suppliers would have to factor in amounts that they would bear, e.g., interconnection charges, as offsets against the revenues that they would receive at the prices they bid.

<sup>&</sup>lt;sup>7</sup> See, for example, "Corporate Renewable Energy Buyers' Principles" issued earlier this month by Facebook, Walmart, Hewlett Packard, Johnson & Johnson, Sprint, Proctor & Gamble, Bloomberg, Intel, Aditya Birch Novelis, Mars, General Motors, and REI and available at http://www.wri.org/publication/corporate-renewable-energy-buyers-principles. WRI, in partnership with the World Wildlife Federation, convened the discussions that gave rise to the principles.

suppliers and products to meet their business goals.<sup>8</sup> Such businesses, particularly in the technology sector, have the ability to shift operations—and thus output and employment—among existing locations quickly and with relative ease; data storage and processing operations would be one such example. Being able to offer renewable energy under VRETs that reflect actual costs of generation, transmission, and distribution can significantly bolster Oregon utilities in their ability to attract and retain such businesses, to the benefit of the state's economy as a whole.

It should also be noted that, by enabling Oregon utilities to compete for a sizable and growing customer base, the authorization of VRETs have the potential to strengthen those utilities financially, with resulting benefits -- such as lower costs of capital -- to their traditional, non-VRET customer base as well. Expanding the potential market for IPPs through competitive procurement and simplified transactions similarly could strengthen their financial base. Conversely, the loss of large existing or potential customers, possibly leading to underutilized facilities and stranded costs, will adversely affect those utilities and their remaining customers.

The Commission should be slow to adopt detailed, prescriptive rules in this rulemaking proceeding. As noted by WRI in its submission of June 17, 2014 in this proceeding, other jurisdictions have authorized VRETs, or their equivalents, taking a wide variety of forms; there is no single and obvious template model for new VRETs. The individual proceedings that result from future VRET filings will provide ample opportunity for the Commission to consider the impact of particular tariff proposals in concrete factual circumstances.

<sup>8</sup> Id.

# CONCLUSION

Properly structured, Voluntary Renewable Energy Tariffs can provide significant benefits, in among other things, promoting the development of renewable energy resources, encouraging economic development.

> Respectfully submitted, Letha Tawney

Letha Journey

Sr. Associate, World Resources Institute ltawney@wri.org

#### Framework for VRET Models Table, July 3, 2014

Basic Structure			Statutory Considerations					
Resource Owner	Utility Role	Relationships	Notes/Comments	Further Dev of Significant RE	Effect on Dev of Competitive Retail Markets	Impacts on Non- Participating Customers	Competitive Procurement Process	Other Considerations
	(1.a.) Regulated utility "passes- through" the renewable energy without taking ownership. (1.b.) Regulated utility is the middleman between a 3rd party and customer(s) that are contracting for renewable energy. Regulated utility takes ownership of power through one contract and sells it to customer(s) through second contract(s).	today. In this arrangement, the utility is not selling power. It is instead an arrangement for T&D. Allowing the utility to participate in the same transaction by way of a VRET should not affect one way or the other the development of significant RE or competitive retail markets, nor should it change the existing effects of passthroughs on non- participating customers. As the utility is not a buyer of power here, there is no occasion to require competitive procurement.	IPP terminates if customer defaults. So, the risk of customer default is borne by the IPP, not the utility. The first half of this "sleeve" transaction could occur today, but the purchased power would go into the utility's overall power mix instead of being dedicated to a particular customer or group of customers. As a result, the predictable, fixed price structure	Whether the utility's ability to offer the purchased power on a dedicated basis under a VRET encourages or discourage development of RE primarily hinges on whether this approach offers simpler access for customers with lower transaction costs than other options. Insofar as the transaction would	Whatever incentives the utility has to sell its own	offer this model of a VRET has no effect on extent of stranded costs caused by this type of buy-	It would be inappropriate to require customers to engage in competitive procurement for this type of transaction. Of course, they might choose to do so. But, they know what is best method of acquisition for them.	
			by specific customers in the current approach.	incentive to accommodate this type of transaction, which could only encourage RE.				

1	1					hang 141 a 1 1 1 a	
	(1.c.) Regulated utility aggregates	While a utility today can put out		Aggregation of load by		The utility's acquisition of	Consideration should be
	customers into a "VRET load" and	a block of needed power for	bring efficiencies, in the	utility arguably might	increase the size of	power to serve aggregated	given as to whether there
	puts that aggregated load out for bid.	bid, the block would not be on	form, for example, of	preempt bilateral	stranded utility generation	load should be through	are any issues relating to
	Regulated utility contracts with third	behalf of any defined group of	greatly reduced transaction	opportunities of IPPs	costs by driving expansion	competitive procurement,	the need to prescribe
	parties to serve the "VRET load."	customers, and the purchased	costs, complementary load	selling RE. But this	of RE. Even if that is the	that could include utility	procedures and criteria to
		power would go into the utility's		preemption would be the	case, there would not be an	affiliates and even	determine opportunity of
		overall power mix. A VRET	better location and	result of efficiencies, not	increase in the ability to	customers owned facilities.	customers to participate in
					shift those costs to non-	Doing so maximizes price	a given aggregation of
		dedicated power to a specific	facilities larger than they	occur only if the	participating customers		load.
(1.) Third Party		aggregated load, including the	might otherwise be	customers participating in	since the bars on doing so	issue as to whether the	
(IPP, ESS)		pricing structure of that energy.		the aggregated load view	are already established in	utility's incentive is to	
			and eliminating risk to IPP	aggregation as preferable	regulations. Aggregation of	bargain for the best price	
			of reliance on a single	to bilateral arrangement	load should not present	(which might otherwise be	
			customer's continued	with an IPP. If preemption	any special difficulties in	in question if the utility is	
			business operations and	is viewed as a serious	identifying costs	not to be allowed any mark-	
			creditworthiness. The	problem, it could be cured	attributable to the VRET	up).	
			opportunity to obtain RE	by requiring the utility to	customers.		
			in a simpler way for	disclose identities of the			
			multiple meters could	facilities to be aggregated,			
			encourage customers to	and allowing reasonable			
			participate who might not	opportunity for IPPs to			
			otherwise pursue RE. The	seek bilateral arrangements			
			opportunity to offer a	with those facilities.			
			VRET to aggregated load				
			could therefore encourage				
			RE.				
		Parts 11 1	htti i Ann	NY 11 1 11			
	(1.d.) Regulated utility aggregates 3rd	There may not actually be a	This aggregation of RE	Nothing in this	Aggregation of supply	Aggregation should be	Unlike resale in a sleeve
	party RE generators and purchases the						
		difference between aggregating	supply could only further	arrangement constrains	might increase the size of	through competitive	transaction, where the
	output through fixed price, long term	load and aggregating supply	the development of RE. It	customer choice or forces	stranded costs if the	procurement, for the	resale is likely to be by
	output through fixed price, long term contracts. The regulated utility offers	load and aggregating supply (1.c. and 1.d.). It would not	the development of RE. It reduces marketing and	customer choice or forces customers to subscribe;	stranded costs if the supply is serving		resale is likely to be by contract, a VRET would
	output through fixed price, long term contracts. The regulated utility offers that output to the customers through	load and aggregating supply (1.c. and 1.d.). It would not seem feasible to aggregate	the development of RE. It reduces marketing and other transaction costs for	customer choice or forces customers to subscribe; they will do so if it appears	stranded costs if the supply is serving aggregated load some or all	procurement, for the	resale is likely to be by contract, a VRET would seem feasible for the resale
	output through fixed price, long term contracts. The regulated utility offers	load and aggregating supply (1.c. and 1.d.). It would not seem feasible to aggregate supply without telling potential	the development of RE. It reduces marketing and other transaction costs for IPPs, and spreads the risk	customer choice or forces customers to subscribe; they will do so if it appears to be a better deal than	stranded costs if the supply is serving aggregated load some or all of which the utility might	procurement, for the	resale is likely to be by contract, a VRET would seem feasible for the resale here, where the utility has
	output through fixed price, long term contracts. The regulated utility offers that output to the customers through	load and aggregating supply (1.c. and 1.d.). It would not seem feasible to aggregate supply without telling potential suppliers the price they will	the development of RE. It reduces marketing and other transaction costs for IPPs, and spreads the risk as against bilateral	customer choice or forces customers to subscribe; they will do so if it appears to be a better deal than what they could obtain in a	stranded costs if the supply is serving aggregated load some or all of which the utility might otherwise supply itself	procurement, for the	resale is likely to be by contract, a VRET would seem feasible for the resale
	output through fixed price, long term contracts. The regulated utility offers that output to the customers through	load and aggregating supply (1.e. and 1.d.). It would not seem feasible to aggregate supply without telling potential suppliers the price they will receive, or, in the case of	the development of RE. It reduces marketing and other transaction costs for IPPs, and spreads the risk as against bilateral arrangements of the	customer choice or forces customers to subscribe; they will do so if it appears to be a better deal than what they could obtain in a bilateral with an IPP. Thus,	stranded costs if the supply is serving aggregated load some or all of which the utility might otherwise supply itself from its owned resources.	procurement, for the reasons noted above in 1.c.	resale is likely to be by contract, a VRET would seem feasible for the resale here, where the utility has
	output through fixed price, long term contracts. The regulated utility offers that output to the customers through	load and aggregating supply (1.c. and 1.d.). It would not seem feasible to aggregate supply without telling potential suppliers the price they will receive, or, in the case of aggregating load, telling	the development of RE. It reduces marketing and other transaction costs for IPPs, and spreads the risk as against bilateral arrangements of the creditworthiness of	customer choice or forces customers to subscribe; they will do so if it appears to be a better deal than what they could obtain in a bilateral with an IPP. Thus, subscription is an addition	stranded costs if the supply is serving aggregated load some or all of which the utility might otherwise supply itself from its owned resources. But this aggregation, would	procurement, for the reasons noted above in 1.c.	resale is likely to be by contract, a VRET would seem feasible for the resale here, where the utility has
	output through fixed price, long term contracts. The regulated utility offers that output to the customers through	load and aggregating supply (1.c. and 1.d.). It would not seem feasible to aggregate supply without telling potential suppliers the price they will receive, or, in the case of aggregating load, telling potential customers the price	the development of RE. It reduces marketing and other transaction costs for IPPs, and spreads the risk as against bilateral arrangements of the creditworthiness of customers and the risk that	customer choice or forces customers to subscribe; they will do so if it appears to be a better deal than what they could obtain in a bilateral with an IPP. Thus, subscription is an addition to rather than a reduction	stranded costs if the supply is serving aggregated load some or all of which the utility might otherwise supply itself from its owned resources. But this aggregation, would not increase the utility's	procurement, for the reasons noted above in 1.c	resale is likely to be by contract, a VRET would seem feasible for the resale here, where the utility has
	output through fixed price, long term contracts. The regulated utility offers that output to the customers through	load and aggregating supply (1.c. and 1.d.). It would not seem feasible to aggregate supply without telling potential suppliers the price they will receive, or, in the case of aggregating load, telling potential customers the price that they will pay. What might	the development of RE. It reduces marketing and other transaction costs for IPPs, and spreads the risk as against bilateral arrangements of the creditworthiness of customers and the risk that they will cease operations	customer choice or forces customers to subscribe; they will do so if it appears to be a better deal than what they could obtain in a bilateral with an IPP. Thus, subscription is an addition to rather than a reduction in customer choice. And,	stranded costs if the supply is serving aggregated load some or all of which the utility might otherwise supply itself from its owned resources. But this aggregation, would not increase the utility's ability to shift such costs to	procurement, for the reasons noted above in 1.c	resale is likely to be by contract, a VRET would seem feasible for the resale here, where the utility has
	output through fixed price, long term contracts. The regulated utility offers that output to the customers through	load and aggregating supply (1.c. and 1.d.). It would not seem feasible to aggregate supply without telling potential suppliers the price they will receive, or, in the case of aggregating load, telling potential customers the price that they will pay. What might emerge informally or formally,	the development of RE. It reduces marketing and other transaction costs for IPPs, and spreads the risk as against bilateral arrangements of the creditworthiness of customers and the risk that they will cease operations at the site. It reduces risk	customer choice or forces customers to subscribe; they will do so if it appears to be a better deal than what they could obtain in a bilateral with an IPP. Thus, subscription is an addition to rather than a reduction in customer choice. And, as noted above,	stranded costs if the supply is serving aggregated load some or all of which the utility might otherwise supply itself from its owned resources. But this aggregation, would not increase the utility's ability to shift such costs to non-participating	procurement, for the reasons noted above in 1.c	resale is likely to be by contract, a VRET would seem feasible for the resale here, where the utility has
	output through fixed price, long term contracts. The regulated utility offers that output to the customers through	load and aggregating supply (1.c. and 1.d.). It would not seem feasible to aggregate supply without telling potential suppliers the price they will receive, or, in the case of aggregating load, telling potential customers the price that they will pay. What might emerge informally or formally, therefore, in both cases is a	the development of RE. It reduces marketing and other transaction costs for IPPs, and spreads the risk as against bilateral arrangements of the creditworthiness of customers and the risk that they will cease operations at the site. It reduces risk to customer of	customer choice or forces customers to subscribe; they will do so if it appears to be a better deal than what they could obtain in a bilateral with an IPP. Thus, subscription is an addition to rather than a reduction in customer choice. And, as noted above, aggregation may bring	stranded costs if the supply is serving aggregated load some or all of which the utility might otherwise supply itself from its owned resources. But this aggregation, would not increase the utility's ability to shift such costs to non-participating customers, as discussed in	procurement, for the reasons noted above in 1.c	resale is likely to be by contract, a VRET would seem feasible for the resale here, where the utility has
	output through fixed price, long term contracts. The regulated utility offers that output to the customers through	load and aggregating supply (1.c. and 1.d.). It would not seem feasible to aggregate supply without telling potential suppliers the price they will receive, or, in the case of aggregating load, telling potential customers the price that they will pay. What might emerge informally or formally, therefore, in both cases is a single price auction whereby	the development of RE. It reduces marketing and other transaction costs for IPPs, and spreads the risk as against bilateral arrangements of the creditworthiness of customers and the risk that they will cease operations at the site. It reduces risk to customer of creditworthiness and ability	customer choice or forces customers to subscribe; they will do so if it appears to be a better deal than what they could obtain in a bilateral with an IPP. Thus, subscription is an addition to rather than a reduction in customer choice. And, as noted above, aggregation may bring efficiencies for generators	stranded costs if the supply is serving aggregated load some or all of which the utility might otherwise supply itself from its owned resources. But this aggregation, would not increase the utility's ability to shift such costs to non-participating customers, as discussed in 1.c. above. The ability is	procurement, for the reasons noted above in 1.c	resale is likely to be by contract, a VRET would seem feasible for the resale here, where the utility has
	output through fixed price, long term contracts. The regulated utility offers that output to the customers through	load and aggregating supply (1.c. and 1.d.). It would not seem feasible to aggregate supply without telling potential suppliers the price they will receive, or, in the case of aggregating load, telling potential customers the price that they will pay. What might emerge informally or formally, therefore, in both cases is a single price auction whereby potential sellers and buyers	the development of RE. It reduces marketing and other transaction costs for IPPs, and spreads the risk as against bilateral arrangements of the creditworthiness of customers and the risk that they will cease operations at the site. It reduces risk to customer of creditworthiness and ability of an IPP to develop and	customer choice or forces customers to subscribe; they will do so if it appears to be a better deal than what they could obtain in a bilateral with an IPP. Thus, subscription is an addition to rather than a reduction in customer choice. And, as noted above, aggregation may bring efficiencies for generators and customers not	stranded costs if the supply is serving aggregated load some or all of which the utility might otherwise supply itself from its owned resources. But this aggregation, would not increase the utility's ability to shift such costs to non-participating customers, as discussed in 1.c. above. The ability is governed by existing	procurement, for the reasons noted above in 1.c	resale is likely to be by contract, a VRET would seem feasible for the resale here, where the utility has
	output through fixed price, long term contracts. The regulated utility offers that output to the customers through	load and aggregating supply (1.c. and 1.d.). It would not seem feasible to aggregate supply without telling potential suppliers the price they will receive, or, in the case of aggregating load, telling potential customers the price that they will pay. What might emerge informally or formally, therefore, in both cases is a single price auction whereby potential sellers and buyers submit bids in the form of	the development of RE. It reduces marketing and other transaction costs for IPPs, and spreads the risk as against bilateral arrangements of the creditworthiness of customers and the risk that they will cease operations at the site. It reduces risk to customer of creditworthiness and ability of an IPP to develop and operate an RE project –	customer choice or forces customers to subscribe; they will do so if it appears to be a better deal than what they could obtain in a bilateral with an IPP. Thus, subscription is an addition to rather than a reduction to rather than a reduction in customer choice. And, as noted above, aggregation may bring efficiencies for generators and customers not obtainable through bilateral	stranded costs if the supply is serving aggregated load some or all of which the utility might otherwise supply itself from its owned resources. But this aggregation, would not increase the utility's ability to shift such costs to non-participating customers, as discussed in 1.c. above. The ability is governed by existing	procurement, for the reasons noted above in 1.c	resale is likely to be by contract, a VRET would seem feasible for the resale here, where the utility has
	output through fixed price, long term contracts. The regulated utility offers that output to the customers through	load and aggregating supply (1.c. and 1.d.). It would not seem feasible to aggregate supply without telling potential suppliers the price they will receive, or, in the case of aggregating load, telling potential customers the price that they will pay. What might emerge informally or formally, therefore, in both cases is a single price auction whereby potential sellers and buyers submit bids in the form of curves with volumes and prices.	the development of RE. It reduces marketing and other transaction costs for IPPs, and spreads the risk as against bilateral arrangements of the creditworthiness of customers and the risk that they will cease operations at the site. It reduces risk to customer of creditworthiness and ability of an IPP to develop and operate an RE project – matters as to which utility	customer choice or forces customers to subscribe; they will do so if it appears to be a better deal than what they could obtain in a bilateral with an IPP. Thus, subscription is an addition to rather than a reduction in customer choice. And, as noted above, aggregation may bring efficiencies for generators and customers not	stranded costs if the supply is serving aggregated load some or all of which the utility might otherwise supply itself from its owned resources. But this aggregation, would not increase the utility's ability to shift such costs to non-participating customers, as discussed in 1.c. above. The ability is governed by existing	procurement, for the reasons noted above in 1.c	resale is likely to be by contract, a VRET would seem feasible for the resale here, where the utility has
	output through fixed price, long term contracts. The regulated utility offers that output to the customers through	load and aggregating supply (1.c. and 1.d.). It would not seem feasible to aggregate supply without telling potential suppliers the price they will receive, or, in the case of aggregating load, telling potential customers the price that they will pay. What might emerge informally or formally, therefore, in both cases is a single price auction whereby potential sellers and buyers submit bids in the form of curves with volumes and prices. The price at which aggregate	the development of RE. It reduces marketing and other transaction costs for IPPs, and spreads the risk as against bilateral arrangements of the creditworthiness of customers and the risk that they will cease operations at the site. It reduces risk to customer of creditworthiness and ability of an IPP to develop and operate an RE project – matters as to which utility expertise will generally	customer choice or forces customers to subscribe; they will do so if it appears to be a better deal than what they could obtain in a bilateral with an IPP. Thus, subscription is an addition to rather than a reduction to rather than a reduction in customer choice. And, as noted above, aggregation may bring efficiencies for generators and customers not obtainable through bilateral	stranded costs if the supply is serving aggregated load some or all of which the utility might otherwise supply itself from its owned resources. But this aggregation, would not increase the utility's ability to shift such costs to non-participating customers, as discussed in 1.c. above. The ability is governed by existing	procurement, for the reasons noted above in 1.c	resale is likely to be by contract, a VRET would seem feasible for the resale here, where the utility has
	output through fixed price, long term contracts. The regulated utility offers that output to the customers through	load and aggregating supply (1.c. and 1.d.). It would not seem feasible to aggregate supply without telling potential suppliers the price they will receive, or, in the case of aggregating load, telling potential customers the price that they will pay. What might emerge informally or formally, therefore, in both cases is a single price auction whereby potential sellers and buyers submit bids in the form of curves with volumes and prices.	the development of RE. It reduces marketing and other transaction costs for IPPs, and spreads the risk as against bilateral arrangements of the creditworthiness of customers and the risk that they will cease operations at the site. It reduces risk to customer of creditworthiness and ability of an IPP to develop and operate an RE project – matters as to which utility	customer choice or forces customers to subscribe; they will do so if it appears to be a better deal than what they could obtain in a bilateral with an IPP. Thus, subscription is an addition to rather than a reduction to rather than a reduction in customer choice. And, as noted above, aggregation may bring efficiencies for generators and customers not obtainable through bilateral	stranded costs if the supply is serving aggregated load some or all of which the utility might otherwise supply itself from its owned resources. But this aggregation, would not increase the utility's ability to shift such costs to non-participating customers, as discussed in 1.c. above. The ability is governed by existing	procurement, for the reasons noted above in 1.c	resale is likely to be by contract, a VRET would seem feasible for the resale here, where the utility has
	output through fixed price, long term contracts. The regulated utility offers that output to the customers through	load and aggregating supply (1.c. and 1.d.). It would not seem feasible to aggregate supply without telling potential suppliers the price they will receive, or, in the case of aggregating load, telling potential customers the price that they will pay. What might emerge informally or formally, therefore, in both cases is a single price auction whereby potential sellers and buyers submit bids in the form of curves with volumes and prices. The price at which aggregate	the development of RE. It reduces marketing and other transaction costs for IPPs, and spreads the risk as against bilateral arrangements of the creditworthiness of customers and the risk that they will cease operations at the site. It reduces risk to customer of creditworthiness and ability of an IPP to develop and operate an RE project – matters as to which utility expertise will generally	customer choice or forces customers to subscribe; they will do so if it appears to be a better deal than what they could obtain in a bilateral with an IPP. Thus, subscription is an addition to rather than a reduction to rather than a reduction in customer choice. And, as noted above, aggregation may bring efficiencies for generators and customers not obtainable through bilateral	stranded costs if the supply is serving aggregated load some or all of which the utility might otherwise supply itself from its owned resources. But this aggregation, would not increase the utility's ability to shift such costs to non-participating customers, as discussed in 1.c. above. The ability is governed by existing	procurement, for the reasons noted above in 1.c	resale is likely to be by contract, a VRET would seem feasible for the resale here, where the utility has
	output through fixed price, long term contracts. The regulated utility offers that output to the customers through	load and aggregating supply (1.c. and 1.d.). It would not seem feasible to aggregate supply without telling potential suppliers the price they will receive, or, in the case of aggregating load, telling potential customers the price that they will pay. What might emerge informally or formally, therefore, in both cases is a single price auction whereby potential sellers and buyers submit bids in the form of curves with volumes and prices. The price at which aggregate demand and supply balance is	the development of RE. It reduces marketing and other transaction costs for IPPs, and spreads the risk as against bilateral arrangements of the creditworthiness of customers and the risk that they will cease operations at the site. It reduces risk to customer of creditworthiness and ability of an IPP to develop and operate an RE project – matters as to which utility expertise will generally exceed that of customers.	customer choice or forces customers to subscribe; they will do so if it appears to be a better deal than what they could obtain in a bilateral with an IPP. Thus, subscription is an addition to rather than a reduction to rather than a reduction in customer choice. And, as noted above, aggregation may bring efficiencies for generators and customers not obtainable through bilateral	stranded costs if the supply is serving aggregated load some or all of which the utility might otherwise supply itself from its owned resources. But this aggregation, would not increase the utility's ability to shift such costs to non-participating customers, as discussed in 1.c. above. The ability is governed by existing	procurement, for the reasons noted above in 1.c	resale is likely to be by contract, a VRET would seem feasible for the resale here, where the utility has
	output through fixed price, long term contracts. The regulated utility offers that output to the customers through	load and aggregating supply (1.c. and 1.d.). It would not seem feasible to aggregate supply without telling potential suppliers the price they will receive, or, in the case of aggregating load, telling potential customers the price that they will pay. What might emerge informally or formally, therefore, in both cases is a single price auction whereby potential sellers and buyers submit bids in the form of curves with volumes and prices. The price at which aggregate demand and supply balance is the market-clearing price that	the development of RE. It reduces marketing and other transaction costs for IPPs, and spreads the risk as against bilateral arrangements of the creditworthiness of customers and the risk that they will cease operations at the site. It reduces risk to customer of creditworthiness and ability of an IPP to develop and operate an RE project – matters as to which utility expertise will generally exceed that of customers. And, as against bilateral	customer choice or forces customers to subscribe; they will do so if it appears to be a better deal than what they could obtain in a bilateral with an IPP. Thus, subscription is an addition to rather than a reduction to rather than a reduction in customer choice. And, as noted above, aggregation may bring efficiencies for generators and customers not obtainable through bilateral	stranded costs if the supply is serving aggregated load some or all of which the utility might otherwise supply itself from its owned resources. But this aggregation, would not increase the utility's ability to shift such costs to non-participating customers, as discussed in 1.c. above. The ability is governed by existing	procurement, for the reasons noted above in 1.c	resale is likely to be by contract, a VRET would seem feasible for the resale here, where the utility has
	output through fixed price, long term contracts. The regulated utility offers that output to the customers through	load and aggregating supply (1.c. and 1.d.). It would not seem feasible to aggregate supply without telling potential supplies the price they will receive, or, in the case of aggregating load, telling potential customers the price that they will pay. What might emerge informally or formally, therefore, in both cases is a single price auction whereby potential sellers and buyers submit bids in the form of curves with volumes and prices. The price at which aggregate demand and supply balance is the market-clearing price that also determines volume. The	the development of RE. It reduces marketing and other transaction costs for IPPs, and spreads the risk as against bilateral arrangements of the creditworthiness of customers and the risk that they will cease operations at the site. It reduces risk to customer of creditworthiness and ability of an IPP to develop and operate an RE project – matters as to which utility expertise will generally exceed that of customers. And, as against bilateral contracts, utilities may be	customer choice or forces customers to subscribe; they will do so if it appears to be a better deal than what they could obtain in a bilateral with an IPP. Thus, subscription is an addition to rather than a reduction to rather than a reduction in customer choice. And, as noted above, aggregation may bring efficiencies for generators and customers not obtainable through bilateral	stranded costs if the supply is serving aggregated load some or all of which the utility might otherwise supply itself from its owned resources. But this aggregation, would not increase the utility's ability to shift such costs to non-participating customers, as discussed in 1.c. above. The ability is governed by existing	procurement, for the reasons noted above in 1.c	resale is likely to be by contract, a VRET would seem feasible for the resale here, where the utility has
	output through fixed price, long term contracts. The regulated utility offers that output to the customers through	load and aggregating supply (1.c. and 1.d.). It would not seem feasible to aggregate supply without telling potential suppliers the price they will receive, or, in the case of aggregating load, telling potential customers the price that they will pay. What might emerge informally or formally, therefore, in both cases is a single price auction whereby potential sellers and buyers submit bids in the form of curves with volumes and prices. The price at which aggregate demand and supply balance is the market-clearing price that also determines volume. The utility purchases and resells at	the development of RE. It reduces marketing and other transaction costs for IPPs, and spreads the risk as against bilateral arrangements of the creditworthiness of customers and the risk that they will cease operations at the site. It reduces risk to customer of creditworthiness and ability of an IPP to develop and operate an RE project – matters as to which utility expertise will generally exceed that of customers. And, as against bilateral contracts, utilities may be more willing than	customer choice or forces customers to subscribe; they will do so if it appears to be a better deal than what they could obtain in a bilateral with an IPP. Thus, subscription is an addition to rather than a reduction to rather than a reduction in customer choice. And, as noted above, aggregation may bring efficiencies for generators and customers not obtainable through bilateral	stranded costs if the supply is serving aggregated load some or all of which the utility might otherwise supply itself from its owned resources. But this aggregation, would not increase the utility's ability to shift such costs to non-participating customers, as discussed in 1.c. above. The ability is governed by existing	procurement, for the reasons noted above in 1.c	resale is likely to be by contract, a VRET would seem feasible for the resale here, where the utility has
	output through fixed price, long term contracts. The regulated utility offers that output to the customers through	load and aggregating supply (1.c. and 1.d.). It would not seem feasible to aggregate supply without telling potential suppliers the price they will receive, or, in the case of aggregating load, telling potential customers the price that they will pay. What might emerge informally or formally, therefore, in both cases is a single price auction whereby potential sellers and buyers submit bids in the form of curves with volumes and prices. The price at which aggregate demand and supply balance is the market-clearing price that also determines volume. The utility purchases and resells at	the development of RE. It reduces marketing and other transaction costs for IPPs, and spreads the risk as against bilateral arrangements of the creditworthiness of customers and the risk that they will cease operations at the site. It reduces risk to customer of creditworthiness and ability of an IPP to develop and operate an RE project – matters as to which utility expertise will generally exceed that of customers. And, as against bilateral contracts, utilities may be more willing than individual customers to	customer choice or forces customers to subscribe; they will do so if it appears to be a better deal than what they could obtain in a bilateral with an IPP. Thus, subscription is an addition to rather than a reduction to rather than a reduction in customer choice. And, as noted above, aggregation may bring efficiencies for generators and customers not obtainable through bilateral	stranded costs if the supply is serving aggregated load some or all of which the utility might otherwise supply itself from its owned resources. But this aggregation, would not increase the utility's ability to shift such costs to non-participating customers, as discussed in 1.c. above. The ability is governed by existing	procurement, for the reasons noted above in 1.c	resale is likely to be by contract, a VRET would seem feasible for the resale here, where the utility has
	output through fixed price, long term contracts. The regulated utility offers that output to the customers through	load and aggregating supply (1.c. and 1.d.). It would not seem feasible to aggregate supply without telling potential suppliers the price they will receive, or, in the case of aggregating load, telling potential customers the price that they will pay. What might emerge informally or formally, therefore, in both cases is a single price auction whereby potential sellers and buyers submit bids in the form of curves with volumes and prices. The price at which aggregate demand and supply balance is the market-clearing price that also determines volume. The utility purchases and resells at	the development of RE. It reduces marketing and other transaction costs for IPPs, and spreads the risk as against bilateral arrangements of the creditworthiness of customers and the risk that they will cease operations at the site. It reduces risk to customer of creditworthiness and ability of an IPP to develop and operate an RE project – matters as to which utility expertise will generally exceed that of customers. And, as against bilateral contracts, utilities may be more willing than individual customers to enter into long-term contracts, because the	customer choice or forces customers to subscribe; they will do so if it appears to be a better deal than what they could obtain in a bilateral with an IPP. Thus, subscription is an addition to rather than a reduction to rather than a reduction in customer choice. And, as noted above, aggregation may bring efficiencies for generators and customers not obtainable through bilateral	stranded costs if the supply is serving aggregated load some or all of which the utility might otherwise supply itself from its owned resources. But this aggregation, would not increase the utility's ability to shift such costs to non-participating customers, as discussed in 1.c. above. The ability is governed by existing	procurement, for the reasons noted above in 1.c	resale is likely to be by contract, a VRET would seem feasible for the resale here, where the utility has
	output through fixed price, long term contracts. The regulated utility offers that output to the customers through	load and aggregating supply (1.c. and 1.d.). It would not seem feasible to aggregate supply without telling potential suppliers the price they will receive, or, in the case of aggregating load, telling potential customers the price that they will pay. What might emerge informally or formally, therefore, in both cases is a single price auction whereby potential sellers and buyers submit bids in the form of curves with volumes and prices. The price at which aggregate demand and supply balance is the market-clearing price that also determines volume. The utility purchases and resells at	the development of RE. It reduces marketing and other transaction costs for IPPs, and spreads the risk as against bilateral arrangements of the creditworthiness of customers and the risk that they will cease operations at the site. It reduces risk to customer of creditworthiness and ability of an IPP to develop and operate an RE project – matters as to which utility expertise will generally exceed that of customers. And, as against bilateral contracts, utilities may be more willing than individual customers to enter into long-term contracts, because the utility has the ability to	customer choice or forces customers to subscribe; they will do so if it appears to be a better deal than what they could obtain in a bilateral with an IPP. Thus, subscription is an addition to rather than a reduction in customer choice. And, as noted above, aggregation may bring efficiencies for generators and customers not obtainable through bilateral	stranded costs if the supply is serving aggregated load some or all of which the utility might otherwise supply itself from its owned resources. But this aggregation, would not increase the utility's ability to shift such costs to non-participating customers, as discussed in 1.c. above. The ability is governed by existing	procurement, for the reasons noted above in 1.c	resale is likely to be by contract, a VRET would seem feasible for the resale here, where the utility has
	output through fixed price, long term contracts. The regulated utility offers that output to the customers through	load and aggregating supply (1.c. and 1.d.). It would not seem feasible to aggregate supply without telling potential suppliers the price they will receive, or, in the case of aggregating load, telling potential customers the price that they will pay. What might emerge informally or formally, therefore, in both cases is a single price auction whereby potential sellers and buyers submit bids in the form of curves with volumes and prices. The price at which aggregate demand and supply balance is the market-clearing price that also determines volume. The utility purchases and resells at	the development of RE. It reduces marketing and other transaction costs for IPPs, and spreads the risk as against bilateral arrangements of the creditworthiness of customers and the risk that they will cease operations at the site. It reduces risk to customer of creditworthiness and ability of an IPP to develop and operate an RE project – matters as to which utility expertise will generally exceed that of customers. And, as against bilateral contracts, utilities may be more willing than individual customers to enter into long-term contracts, because the utility has the ability to substitute new subscribers	customer choice or forces customers to subscribe; they will do so if it appears to be a better deal than what they could obtain in a bilateral with an IPP. Thus, subscription is an addition to rather than a reduction in customer choice. And, as noted above, aggregation may bring efficiencies for generators and customers not obtainable through bilateral	stranded costs if the supply is serving aggregated load some or all of which the utility might otherwise supply itself from its owned resources. But this aggregation, would not increase the utility's ability to shift such costs to non-participating customers, as discussed in 1.c. above. The ability is governed by existing	procurement, for the reasons noted above in 1.c	resale is likely to be by contract, a VRET would seem feasible for the resale here, where the utility has
	output through fixed price, long term contracts. The regulated utility offers that output to the customers through	load and aggregating supply (1.c. and 1.d.). It would not seem feasible to aggregate supply without telling potential suppliers the price they will receive, or, in the case of aggregating load, telling potential customers the price that they will pay. What might emerge informally or formally, therefore, in both cases is a single price auction whereby potential sellers and buyers submit bids in the form of curves with volumes and prices. The price at which aggregate demand and supply balance is the market-clearing price that also determines volume. The utility purchases and resells at	the development of RE. It reduces marketing and other transaction costs for IPPs, and spreads the risk as against bilateral arrangements of the creditworthiness of customers and the risk that they will cease operations at the site. It reduces risk that they will cease operations at the site. It reduces risk to customer of creditworthiness and ability of an IPP to develop and operate an RE project – matters as to which utility expertise will generally exceed that of customers. And, as against bilateral contracts, utilities may be more willing than individual customers to enter into long-term contracts, because the utility has the ability to substitute new subscribers to the aggregated supply,	customer choice or forces customers to subscribe; they will do so if it appears to be a better deal than what they could obtain in a bilateral with an IPP. Thus, subscription is an addition to rather than a reduction in customer choice. And, as noted above, aggregation may bring efficiencies for generators and customers not obtainable through bilateral	stranded costs if the supply is serving aggregated load some or all of which the utility might otherwise supply itself from its owned resources. But this aggregation, would not increase the utility's ability to shift such costs to non-participating customers, as discussed in 1.c. above. The ability is governed by existing	procurement, for the reasons noted above in 1.c	resale is likely to be by contract, a VRET would seem feasible for the resale here, where the utility has
	output through fixed price, long term contracts. The regulated utility offers that output to the customers through	load and aggregating supply (1.c. and 1.d.). It would not seem feasible to aggregate supply without telling potential suppliers the price they will receive, or, in the case of aggregating load, telling potential customers the price that they will pay. What might emerge informally or formally, therefore, in both cases is a single price auction whereby potential sellers and buyers submit bids in the form of curves with volumes and prices. The price at which aggregate demand and supply balance is the market-clearing price that also determines volume. The utility purchases and resells at	the development of RE. It reduces marketing and other transaction costs for IPPs, and spreads the risk as against bilateral arrangements of the creditworthiness of customers and the risk that they will cease operations at the site. It reduces risk to customer of creditworthiness and ability of an IPP to develop and operate an RE project – matters as to which utility expertise will generally exceed that of customers. And, as against bilateral contracts, utilities may be more willing than individual customers to enter into long-term contracts, because the utility has the ability to substitute new subscribers	customer choice or forces customers to subscribe; they will do so if it appears to be a better deal than what they could obtain in a bilateral with an IPP. Thus, subscription is an addition to rather than a reduction in customer choice. And, as noted above, aggregation may bring efficiencies for generators and customers not obtainable through bilateral	stranded costs if the supply is serving aggregated load some or all of which the utility might otherwise supply itself from its owned resources. But this aggregation, would not increase the utility's ability to shift such costs to non-participating customers, as discussed in 1.c. above. The ability is governed by existing	procurement, for the reasons noted above in 1.c	resale is likely to be by contract, a VRET would seem feasible for the resale here, where the utility has

(2.) Regulated Utility	Regulated utility owns and operates renewable resource(s) and delivers power to customer. (3.a.) Regulated utility "passes-		In many respects this could be structured like 1b or like 1c/d from the customer perspective. Competitive procurement and proper anticompetiiveness measures would be required. As the Table points out, this is	regardless of the generation ownership model.	If and to the extent that VRE15 would lead to utility intent to increase owned RE, VRE15 might increase the incentive to favor the utility's own RE. This might discourage RE development if utilities have the ability to act on those increased incentives. Does the utility have that ability, so that utility RE will prevail over equally or more efficient IPP RE2 The answer depends on efficacy of existing regulations governing interconnection, access to T&D, and unbundling of costs. A VRET does not expand any deficiencies in those regulations.	The identification of costs caused by the dedicated resource owned by the utility should not pose unique problems, particularly if the resource is bid into a competitive procurement. Allocation of costs that are joint and common with non- participating customers should be by standard methods for allocation among customer classes.	Utility should be required to bid its own proposed RE into competitive procurement process.	
(3.) Utility Affiliate	(3.a.) Regulated utility "passes- through" the renewable energy without taking ownership. (3.b.) Regulated utility is the middleman between a utility affiliate and customer(s) that are contracting for renewable energy. Regulated utility takes ownership of power through one contract and sells it to the customer(s) through a second contract(s).		As the lable points out, this is essentially the same as 1.a.		The utility's ability to purchase RE from an affiliate and resell on a dedicated basis under a VRET would not increase incumbent advantage in retail competition with IPPs offering RE or conventional power. The option of purchasing RE from an affiliate after a competitive procurement and reselling under a VRET would not cause a utility to offer RE when it would not otherwise do so.		Utility purchases from an affiliate should be the result of competitive procurement.	
(4.) Customer Owned	Regulated utility role depends on the customer's specific load and resource. Could involve distribution and back- up/supplemental services; "firming and shaping."	Customers could be enabled to own an RE facility offsite in models like 1a and 1b or through the opportunity to bid their project into any of the competitive procurement options	Customers today can self- supply with RE under the net metering regulations, and obtain backup and supplemental power under partial requirements tariffs. In the unlikely event that the backup and supplemental power is RE, the ability of a utility to offer such power, and associated distribution, under a VRET would not seem to present considerations distinct from those in the passthrough transactions or in any of the types of transactions in which the utility is selling RE.					
	(5.a.) Regulated utility continues to provide energy and services as it does with a cost-of-service customer today.		This option is widely available today to customers.	This options is unlikely to rather development of RE as it is widely available today.				

	·	 			 
	(5.b.) Regulated utility buys bundled	In the models listed above,	While the RECs are central		
	RECs from the market and re-sells	customers would need the	to claiming the use of		
	them to the customer(s).	RECs associated with the	green power - if this		
		energy to be included in the	product were offered		
(5.) Market-Based		VRET in order to claim use of	without the attractive price		
(REC Product)		green power. Otherwise they	structure attributes of		
(		will need to buy other,	renewable energy, it would		
		unbundled RECs to claim they	be essentially the same as		
		are using green power. It is	5a and would be unlikely to		
		likely a minority of customers	expand development of		
		that would participate in a	RÉ.		
		VRET with no interest in also			
		receiving the RECs or having			
		them retired on their behalf.			
	Open access, transmission only service	Staff inquired where energy			
	by regulated utility	balancing and ancillary services			
	·· · · · · · · · · · · · · · · · · · ·	should be procured. There is no			
		evident reason why the			
		customer should not be able to			
		arrange for energy balancing			
		and ancillary services from the			
(6.) 3rd Party		third party. At the same time, it			
(transmission		would encourage the			
VRET)		development of RE and of			
VKE1)		competitive markets if the			
		utility remains obligated to			
		provide such services at the			
		request of the customer and			
		with sufficient notice to allow			
		the acquisition by the utility of			
		the necessary capacity.			
		· · · ·			