HQ Energy Services US

March 28, 2003

H.Q. Energy Services (U.S.) Inc.
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BY HAND

Honorable Janet Hand Deixler
Secretary
New York State
Public Service Commission
Three Empire State Plaza
Albany, New York 12210

Re: Case 03-E-0188 - Proceeding on Motion of the Commission Regarding a Retail Renewable Portfolio Standard

Dear Secretary Deixler:

Enclosed for filing please find an original and three (3) copies of comments of H.Q. Energy Services (U.S.) Inc., in the above-referenced case. All parties to this proceeding are being served by e-mail and First Class Mail.

If you have any questions regarding this filing, please contact me.

Respectfully submitted,

Gilles Favreau
(514) 289-3612

cc: Active Party Service List (via E-mail and First Class Mail)

STATE OF NEW YORK
PUBLIC SERVICE COMMISSION

Proceeding on Motion of the Commission Regarding a Retail Renewable Portfolio Standard	:	**Case No. 03-E-0188**

COMMENTS OF
H.Q. ENERGY SERVICES (U.S.) INC.

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Dated: March 28, 2003

STATE OF NEW YORK
PUBLIC SERVICE COMMISSION

Proceeding on Motion of the Commission Regarding a Retail Renewable Portfolio Standard	**:**	**Case No. 03-E-0188**

COMMENTS OF
H.Q. ENERGY SERVICES (U.S.) INC.

H.Q. Energy Services (U.S.) Inc. ("HQUS") is a Delaware corporation having its principal place of business in Pittsburgh, Pennsylvania. It is a wholly-owned subsidiary of Hydro-Québec, a public utility located in Québec, Canada. HQUS is a marketer of electricity, natural gas and various energy related services within the United States.

HQUS shares the concerns of New Yorkers that over-dependence on fossil-fired generation has adverse effects on the environment and human health, as well as on the stability of the price and supply of electricity. We support the goals of the 2002 State Energy Plan ("SEP") to promote the use of renewable energy resources to alleviate these concerns. HQUS believes that a properly structured renewable portfolio standard ("RPS") can ensure continuing environmental benefits from existing renewable resources while providing the appropriate financial and market incentives necessary to encourage development of new renewable technologies that may not yet be commercially viable.

The New York State Public Service Commission (the "Commission") instituted this proceeding to involve various stakeholders in the development of a policy on RPS to contribute to the achievement of New York's renewable energy goals. HQUS provides the

following comments addressing selected threshold issues which were identified in the Commission's Order Instituting Proceeding in this docket, issued February 19, 2003 (the "Order"). We do not address threshold issues which are related to retail marketing of renewable energy.

I. The Types Of Resources That Should Be Considered As "Renewable" For The Purposes Of A Renewable Portfolio Standard.

A. Hydroelectric Resources Should Be Included In New York's RPS.

HQUS believes that all renewable resources, including existing hydro resources, should be included in the RPS for New York. The SEP defines the term "renewable energy" to mean "energy derived from resources that are not depletable or are naturally replenished when used at sustainable levels." SEP at p. 3-40. Hydroelectric resources obviously are within this definition. We agree with that definition and believe that it captures the essence of the goal of encouraging reliance on energy resources that work with the environment rather than against it. The Commission also recognizes hydro resources as renewables. The Order refers to the fact that 17 percent of the electricity used in New York is provided by renewable resources, and indicates that it would be in the public interest if renewable resources constituted 25 percent of the electricity used in New York. Order at p. 2. Hydroelectric resources comprise nearly all of the 17 percent of total energy supplied by renewable resources. Both the Order and the SEP appropriately treat existing hydro resources as "renewable" for purpose of this proceeding. Accordingly, all types of renewable resources, including mature hydroelectric resources, should be classified as "renewable" for purposes of the RPS.

Eligibility of energy sources should relate directly to the types of benefits that policy makers seek to achieve.[1] However, those benefits have to be balanced with sufficient availability of supply and final costs deferred to consumers. In other words, in New York where retail electricity rates are among the highest in the country, consumers should not be asked to pay excessive amounts merely to help diversify New York's electricity generation mix, especially where renewable energy supplies already are relatively abundant and not onerously expensive. We support the recommendation of the New York Energy Research and Development Authority ("NYSERDA") to the members of the NYS Energy Planning Board that existing renewable facilities should be counted toward meeting the goal that at least 25 percent of retail electricity sales in New York be generated from renewable energy resources by 2013.[2]

B. Existing Hydro In The RPS Will Benefit The Environment While The Proportion Of "New" Renewable Technologies Grows.

HQUS understands that a goal of the SEP, as well as the Governor's Executive Order No. 111 and investment programs by NYSERDA, is to provide financial incentives and otherwise remove barriers to encourage the development of "new" renewable technologies which may not yet be commercially viable on a large scale. The new technologies include photovoltaics, geothermal, solar, wind, tidal power, methane waste and fuel cells. These technologies represent less than 2 percent of the megawatt-hours ("MWh") of electric energy purchased in New York April 2001 to March 2002, while hydro represents about 17 percent of the total MWh.[3]

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[1] Rader, Nancy and Hempling, Scott, *The Renewables Portfolio Standard, A Practical Guide*, February 2001.
[2] NYSERDA, *Preliminary Investigation into Establishing a Renewable Portfolio Standard in New York*, at p. 5 (February 14, 2003).
[3] Case No. 03-E-0188, NYSDPS Baseline Electric Generation Sources, Letter to ALJ (March 17, 2003).

The worthy desire to increase the share of new renewable technologies in the overall resource mix is perfectly compatible with recognizing the importance of existing hydro in New York's RPS. The overall goal of an RPS is to improve the quality of the environment and human health. The significance of the contribution of hydroelectric resources towards this goal is not diminished by the fact that the facilities are already developed.

The recognition of existing hydropower facilities as sources of renewable energy in the RPS in no way precludes the devotion of financial resources to assist in the development of the new renewable technologies. Government funded research and development subsidies, funds collected through a system benefits charge, and similar investment programs can, and should, be allocated to those renewable technologies which require such support. Mature hydro technologies generally do not need R&D investment assistance. However, the design of an RPS should not be confused with the decision to direct investment to new technologies. The purpose of an RPS is much broader: to encourage the use of all types of renewable resources to mitigate the environmental effects of increasing dependence on fossil-fuel energy resources.

Including existing hydro in the RPS can help to widen public support for new technologies. Existing hydro resources in a properly structured RSP provide an "umbrella" that permits electricity customers to satisfy their desire to purchase "green" power at a reasonable cost throughout the planning period. Existing hydro resources also are necessary to provide reliability support within the renewables sector for intermittent renewable resources (such as windmills and photovoltaics) without increasing dependence on fossil-fueled generation. For example, carefully designed periodic targets for each type of renewable resource could be scheduled over the planning period to provide for the new and more expensive technologies to increase their share in the renewables sector. A tiered structure within the RPS could be used to

ensure that mature technologies do not detract from progress in improving the commercial viability of other renewable resources. In this manner, New York could retain its preeminence in improving the quality of the environment through a high proportion of renewable energy in its overall resource mix, while maintaining the affordability of renewable energy for consumers in these difficult economic times.

C. Existing Large Hydro In The RPS Advances The Goal Of Reducing Over-dependence On Fossil-Fueled Generation.

Large-scale hydro is an advantage to an RPS, although small-scale hydro is sometimes described as *low impact hydro*. This judgment results from comparing the impact of a single small dam with the impact of a large dam. The logic of this comparison is flawed. This is not to say that small hydro is unacceptable. It is a renewable and it allows the use of good sites on small rivers. But it does not necessarily follow that all hydro beneficial to the environment must be small. The fact is that there are *environmental economies of scale* in the large-scale hydro design. For the same amount of energy produced and everything else being equal, a large dam is the lower impact option. Large-scale hydroelectric resources are indisputably renewable – if the term is to be true to its meaning. The exclusion of large hydro from an RPS is irrational and severely limits the potential contribution of renewables in the relevant market.

The *small is beautiful* preference has no theoretical foundation. A very simple geometrical model suffices to show that there is no inherent ecological virtue in the small scale.[4] This model is, of course, very theoretical. But so also is the belief in the inherent superiority of small-scale sites and hydro plants. Furthermore, this geometric theoretical rule is supported by

[4] The model is derived from Drapeau, J.-P. and Y. Guérard (1993), *Rehabilitating Hydroelectricity and Refuting the Lies*, Brief presented to the parliamentary committee responsible for studying Hydro-Québec's proposed 1993 Development Plan, GRAME.

statistical analysis. Table 1 below shows that the average reservoir area per MW of existing hydro capacity may be up to 8 times larger for small projects than for large projects.

Table 1 : Average Size of Hydro Reservoir per Unit of Capacity [5]

Size of plants (MW)	Number of plants in category	Average size of reservoir per unit of power (hectare / MW)
3 000 to 18 200	19	32
2 000 to 2 999	16	40
1 000 to 1 999	36	36
500 to 999	25	80
250 to 499	37	69
100 to 249	33	96
2 to 99	33	249

The main virtue of small-scale hydro is political and institutional: it is easier to license and easier for local communities to accept; and small scale hydro can be built more rapidly. The truth is that there are good sites for small-scale hydroelectric plants and good sites for large-scale ones. There are also bad sites and bad projects in both size categories. The practice of sound environmental impact assessment (EIA) should guide decisions on a case-by-case basis, in accordance with the fundamental purpose of the EIA, without ignoring the study of possible cumulative effects. The *small versus large-scale* debate simply is not relevant to the goal of sustainable development.

A report by the International Energy Agency states that comparisons of electricity generation options must always take into account the reliability and flexibility of the energy services provided. For example, the report states that, "Windpower . . . [n]eeds a backup system

[5] Source of data : Goodland, Robert (1995), *How to Distinguish Better Hydros from Worse : the Environmental Sustainability Challenge for the Hydro Industry*, The World Bank.

with immediate response, generally hydropower with reservoir".[6] Everything else being equal, smaller reservoirs will provide lower electrical output than larger reservoirs, and thus that more thermal plants are required to meet peak demand and fluctuations in demand. If the RPS were to exclude large hydro resources, it would severely limit the potential of renewables instead of increasing it.

If the pressure to exclude existing large-scale hydro from New York's RPS ensues from a fear of seeing the RPS quotas flooded by existing hydro capacity, then a rational and efficient compromise solution may be designed. For example, an RPS can be structured in tiers. One possible structure would separate existing renewables from new (or recently developed) renewables, including new hydro resources. With this approach, existing hydro would not be competing with new windpower or commercially immature technologies. The competition would be, for instance, between new windpower and new hydro (which is much more expensive than existing hydro). This approach would widen the opportunities for renewable development, increasing the efficiency of the RPS.[7]

There are other tiered approaches to be considered. Rader and Hempling (2001) propose an alternative tiered approach that separates renewable resources on the basis of the need for financial and market support to encourage development.

> Adding a resource tier allows policy makers to accomplish two distinct goals with the RPS that a uniform RPS requirement could not meet. In a two-tiered standard, for example, one tier (the larger, "base" tier) can achieve resource diversity in the electric system at the lowest cost. The second, smaller tier may advance a set of higher-cost technologies that policy makers deem to have

[6] IEA (2000), Hydropower and the Environment, Present Context and Guidelines for Future Action, Volume II, Main Report, IEA Hydropower Agreement, p. 55.

[7] Adopting a separate RPS for existing renewable facilities would also be justified to ensure that existing renewables continue to avoid air pollution in a given region, at a reasonable cost. In this case, hydro can provide large reductions in air emissions, because of its large capacity and low costs.

> significant long-term development potential which would not be deployed in sufficient quantity absent the second tier.[8]

Finally, the recognition of hydropower facilities of any size as sources of renewable energy should not be perceived as preventing the development of any type of renewable technology. For instance, New York State may help windpower technology with R&D subsidies or other programs collected through a public charge whereas mature hydro technologies would not necessarily need such a support. There is often confusion between the purposes of subsidies, public charges or trust funds on one hand, and the purpose of an RPS on the other hand. The purpose of an RPS is to encourage the development and use of all renewable facilities, whereas the trust fund should focus on supporting technological development of emerging technologies. Viewed in this light, inclusion of low-cost renewables in an RPS does not cause unfair competition relative to more expensive renewables, such as windpower. On the contrary, the RPS should enlarge the total share of renewables in the market compared with fossil fuel alternatives and facilitate the emergence of new technologies. As expressed by Rader and Hempling (2001),

> Instead of trying to meet various goals with a RPS policy, a state can adopt complementary policies targeted to specific objectives.[9]

HQUS agrees with this approach.

II. The Appropriateness Of Including Renewable Resource Energy Procured From Outside The State, Such As Hydropower from Canada Or Wind Energy From New England.

Hydro-Québec has been supplying New York with renewable energy for decades. This historic relationship has been cost-effective for New York customers, as well as beneficial to the environment. In 1998, for example, Hydro-Québec's net exports to the United States

[8] Rader and Hempling, *supra*, at 37.

allowed the avoidance of 12.4 million tons of CO_2, 43.2 thousand tons of SO_2 and 19.0 thousand tons of NO_x by U.S.-based generators.[10] Hydro Québec's sales of hydropower to New York also contribute to the security and reliability of New York consumers' supply of electricity.

HQUS understands that there may be some concern that large volumes of imported hydro power may thwart plans to develop new renewable technologies. As discussed above, this concern can be resolved by an appropriately designed RPS using tiers or other structural constraints on the volume of existing renewable resources in the portfolio as the share of new renewables increases. In addition, Hydro-Québec's net exports of electricity outside of existing contracts are expected to shrink in the coming years because nearly all of Québec's generating capacity is expected to be required to serve its own domestic market.[11]

The high proportion of renewable energy of all types that is available to New York consumers is due in part to the ability to import from neighboring regions. There is no rational justification for treating existing out-of-state renewable resources of any type differently than in-state resources in the design of a rational and cost-effective RPS. Imports are important to the achievement of New York's goal that 25 percent of retail electricity sold should be from renewable resources by 2013.

For the reasons explained above, HQUS believes that all renewable resources, both in-state and regional, should be included in the RPS to maximize the use of all types of renewable energy resources in New York on a cost-effective basis without detracting from the encouragement to new renewable technologies. The paramount concern should be to achieve

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[9] *Id.*

[10] Comparison between average emissions of Hydro-Québec and those of the producers in its export markets were audited and certified by: Deloitte & Touche, LLP, Chartered Accountants (2001), *Auditor's report on energy supply sources and air emissions from Hydro-Québec*, Montréal, Hydro-Québec (2001), *L'environnement: Plus qu'un engagement*, Rapport de performance environnementale 2000.

[11] Hydro-Québec (2001), Strategic Plan 2002-2006.

New York's goals for improving the proportion of renewable resources in New York's energy mix for the benefit of the environment.

III. The Appropriateness Of A "Renewable Attributes Trading" System, And The Components Of Any Such System That Might Be Developed.

HQUS, like many authors,[12] favours a credit-like trading system rather than a contract-path model because of the benefits to consumers and retail marketers, as well as to suppliers of renewable energy, including small and intermittent generators.

A system of tradable certificates or credits greatly enhances the availability of markets for renewable energy sources, emissions credits and other preferred generation attribute products. By creating a secondary market for generation certificates, marketers can purchase their customers' preferred resources in the most flexible, cost-effective manner. A trading system also allows marketers to reach customers they otherwise might not reach due to the physical constraints of the transmission system or the distance to a preferred generator. For example, compatible tradable certificates systems will allow for the integration of imports and exports of certificates between ISOs. In the absence of compatible systems, it is possible that certificates for imports and exports will be allowed only if bilateral contracts exist between a generator and a retail supplier.

Trading systems accommodate smaller renewable generating resources on the customer's side of the meter, such as solar systems, that are eligible under a state RPS policy. In so doing, preferred generation attributes can more readily be marketed across a broader regional area. Trading systems also create a level playing field for intermittent generation resources. A liquid market in which generation certificates for all types of resources may be created, traded,

and retired during an equal reporting period will maximize the market's ability to support intermittent resources – including many forms of renewable energy. Such a market will enable consumers to purchase products, and support any generation resource, based on their personal preferences rather than the time of day a particular unit was able to run.

Customers also are protected when a tradable certificates program is in effect. Compatible tradable certificates systems will eliminate confusing and contradictory reports and give retail suppliers an opportunity to assure consumers of the validity of their product offerings. Consistent and accurate information enhances consumers' confidence in the market as a whole.

Compatible tradable certificates systems also will remove major barriers to the opening of new markets for environmentally preferable ("green") products and facilitate the inter-ISO exchange of tradable certificates. Without tradable certificates systems and their resulting accountability, restrictions could be imposed on the importation or exportation of certificates between ISOs, which would have a chilling effect on the emergence of new market opportunities.

A tradable certificates or credits market creates liquidity for generation attributes. Simply stated, purchasing a certificate is easier than purchasing a kilowatt-hour because one does not have to deal with ancillary services, imbalance markets and other market expenses. This liquidity advantage makes it easier for retail suppliers to assure that they meet their marketing claims, respond to consumer demand with innovative products, and allows them to deliver such products to market at least cost.

Finally, tradable certificates allow retail suppliers to shape and deliver their products with the preferred attributes with ease, thereby adding product diversity to the

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[12] See notably Bolton, Stacey, *The Benefits of a Tradable Certificates System*, September 2001. See also Rader, Hempling, 2001, p. 62, referring to Grace, Wiser, Abbanat, 2000 at p. 63.

generation attribute market. Without tradable certificates, a retail supplier wanting to offer a 100 percent wind product would have to charge a higher rate due to the intermittency of wind resources. A trading system allows retail suppliers to sell products with preferred generation attributes and design products to appeal to evolving customers' interests. This increased flexibility allows retail suppliers to tailor their products. The absence of such flexibility may require retail suppliers to increase the safety margin needed to assure compliance with RPS requirements or fulfill marketing claims. To compensate for the lack of flexibility, retail suppliers may need to over-procure generation with preferred attributes to assure that enough of the desired attribute remains to fulfill obligations to customers, thereby increasing the supplier's costs, and unnecessarily raising the retail price of power.

Coordinating tradable certificates systems among states will further competitive markets because using a uniform system will entail lower transaction costs for retail suppliers. Lower transaction costs will improve competitive opportunities of retail electricity markets. Improved competition in generation attribute markets will enhance the success of public policies to improve consumer disclosures, encourage the development of renewable energy markets, improve air emissions and expand consumer choice.

IV. Conclusion.

For the reasons explained above, HQUS believes it is appropriate for the Commission to adopt an RPS that is geographically broad and open to all renewable energy sources.

Respectfully submitted,

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Dated: March 28, 2003