

## LOW IMPACT HYDROPOWER INSTITUTE

### APPENDIX B – QUESTIONNAIRE DECEMBER, 2013 REVISION

<b>Background Information</b>																																														
1) Name of the Facility as used in the FERC license/exemption.	Hoosic River Project; FERC No. P-2616-NY Comprised of the following two facilities (upstream to downstream) Johnsonville and Schaghticoke.																																													
2) Applicant’s name, contact information and relationship to the Facility. If the Applicant is not the Facility owner/operator, also provide the name and contact information for the Facility owner and operator. Also provide contact information for Compliance and Accounts Payable, including email addresses.	Mr. Matthew Johnson Brookfield Renewable Energy Group 399 Big Bay Road Queensbury, NY 12804																																													
3) Location of Facility including (a) the state in which Facility is located; (b) the river on which Facility is located; (c) the river-mile location of the Facility dam; (d) the river’s drainage area in square miles at the Facility intake; (e) the location of other dams on the same river upstream and downstream of the Facility; and (f) the exact latitude and longitude of the Facility dam.	<table style="width: 100%; border: none;"> <tr> <td style="width: 50%;"></td> <td style="width: 50%; text-align: right;">Johnsonville</td> <td style="width: 50%;"></td> <td style="width: 50%; text-align: right;">Schaghticoke</td> </tr> <tr> <td>a) New York</td> <td></td> <td></td> <td style="text-align: right;">New York</td> </tr> <tr> <td>b) Hoosic</td> <td></td> <td></td> <td style="text-align: right;">Hoosic</td> </tr> <tr> <td>c) 13.40 miles</td> <td></td> <td></td> <td style="text-align: right;">7.38 miles</td> </tr> <tr> <td>d) 604 Sq. Mi. Total</td> <td></td> <td></td> <td></td> </tr> <tr> <td>e) One dam between Johnsonville and</td> <td></td> <td></td> <td style="text-align: right;">Schaghticoke owned by others: Valley Falls</td> </tr> <tr> <td>f) See below:</td> <td></td> <td></td> <td></td> </tr> </table> <table style="width: 100%; border: none; font-size: small;"> <thead> <tr> <th style="text-align: left;">Point Number</th> <th style="text-align: left;">Raw Description</th> <th style="text-align: left;">Grid Northing</th> <th style="text-align: left;">Grid Easting</th> <th style="text-align: left;">Longitude</th> <th style="text-align: left;">Latitude</th> </tr> </thead> <tbody> <tr> <td>500</td> <td>SCHAGHTICOKE DAM</td> <td>1480546</td> <td>736455</td> <td>W73° 35' 17.4249"</td> <td>N42° 53'</td> </tr> </tbody> </table>							Johnsonville		Schaghticoke	a) New York			New York	b) Hoosic			Hoosic	c) 13.40 miles			7.38 miles	d) 604 Sq. Mi. Total				e) One dam between Johnsonville and			Schaghticoke owned by others: Valley Falls	f) See below:				Point Number	Raw Description	Grid Northing	Grid Easting	Longitude	Latitude	500	SCHAGHTICOKE DAM	1480546	736455	W73° 35' 17.4249"	N42° 53'
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	501	JOHNSONVILLE DAM	1490264	757849	W73° 30' 28.5049"	N42° 55' 11.0414"
4) Installed capacity.	Total: 18.5MW. By facility, installed capacity is as follows. <ul style="list-style-type: none"> <li>• Johnsonville: 2.1 MW</li> <li>• Schaghticoke: 16.4 MW</li> </ul>					
5) Average annual generation.	~83,000 MWh					
6) Regulatory status.	Relicensed via a collaborative settlement. The Off of Settlement was signed in July 2002, and the new FERC license was issued in November 2002					
7) Reservoir volume and surface area measured at the normal maximum operating level.	Johnsonville: 6,430 acre-feet gross storage & 450 surface acres Schaghticoke: 1,150 acre-feet gross storage & 150 surface acres					
8) Area occupied by non-reservoir facilities (e.g., dam, penstocks, powerhouse).	Not required					
9) Number of acres inundated by the Facility.	Not required					
10) Number of acres contained in a 200-foot zone extending around entire reservoir.	Not required					
11) Contacts for Resource Agencies and non-governmental organizations	The key resource agencies named in the Settlement, as well as the list provided to LIHI in 2009 remains valid.					
12) Description of the Facility, its mode of operation (i.e., peaking/run of river) and photographs, maps and diagrams.	The Exhibit F and Exhibit G are attached. With the relatively tight constraint on the reservoir elevations, both facilities are arguably considered “run-of-river”. However, it should be noted that output may be increased during periods of strong energy demand, while remaining within the allowable operating limits on the reservoirs.					
<b>Questions for “New” Facilities Only:</b> If the Facility you are applying for is “new”	N/A					

<p>(i.e., an existing dam that added or increased power generation capacity after August of 1998) please answer the following questions to determine eligibility for the program.</p>	
<p>13) When was the dam associated with the Facility completed?</p>	<p>N/A</p>
<p>14) When did the added or increased generation first generate electricity? If the added or increased generation is not yet operational, please answer question 18 as well.</p>	<p>N/A</p>
<p>15) Did the added or increased power generation capacity require or include any new dam or other diversion structure?</p>	<p>N/A</p>
<p>16) Did the added or increased capacity include or require a change in water flow through the facility that worsened conditions for fish, wildlife, or water quality (for example, did operations change from run-of-river to peaking)?</p>	<p>N/A</p>
<p>17 (a) Was the existing dam recommended for removal or decommissioning by resource agencies, or recommended for removal or decommissioning by a broad representation of interested persons and organizations in the local and/or regional community prior to the added or increased capacity?</p>	<p>N/A</p>

<p>(b) If you answered “yes” to question 17(a), the Facility is not eligible for certification, unless you can show that the added or increased capacity resulted in specific measures to improve fish, wildlife, or water quality protection at the existing dam. If such measures were a result, please explain.</p>		
<p>18 (a) If the added or increased generation is not yet operational, has the increased or added generation received regulatory authorization (e.g., approval by the Federal Energy Regulatory Commission)? If not, the facility is not eligible for consideration; and (b) Are there any pending appeals or litigation regarding that authorization? If so, the facility is not eligible for consideration.</p>	N/A	
<p><b>A. Flows</b></p>	<p>PASS</p>	<p>FAIL</p>
<p>1) Is the Facility in Compliance with Resource Agency Recommendations issued after December 31, 1986 regarding flow conditions for fish and wildlife protection, mitigation and enhancement (including in-stream flows, ramping and peaking rate conditions, and seasonal and episodic instream flow variations) for both the reach below the tailrace and all bypassed reaches?</p>	<p><i>YES = Pass, Go to B</i>  <b>Yes</b> – The Hoosic River Project is in compliance with resource agency recommendation issued after December 31, 1986 regarding flow requirements. The FERC license, Offer of Settlement, and 401 WQC include the requirements for flow releases and water level control recommended by the New York State Department of Environmental Conservation (NYSDEC), the U.S. Fish &amp; Wildlife Service (USFWS) and the other signatories to the Offer of Settlement. In accordance with the FERC license and Offer of Settlement, the flow and level requirements were implemented in February 2004. Each year Erie files documentation with the FERC attesting to compliance with flow</p>	<p>NO = Fail</p>

	<p>and level conditions.</p> <p><b>Minimum flows</b> in the bypassed reaches of each development are as follows:</p> <ul style="list-style-type: none"> <li>• Johnsonville: 0 cfs (no bypassed reach)</li> <li>• Schaghticoke: 60 cfs continuous year round</li> </ul> <p>The method of release and time of implementation are also established in the Offer of Settlement as recommended by resource agencies and others.</p> <p><b>Base flows</b> below each powerhouse of each development are as follows:</p> <ul style="list-style-type: none"> <li>• Johnsonville: 220 cfs</li> <li>• Schaghticoke: 240 cfs</li> </ul> <p><b>Maximum daily reservoir fluctuations</b> under normal flow conditions are limited as follows:</p> <ul style="list-style-type: none"> <li>• Johnsonville: 0.25 feet; June 1 – September 30, 0.50 feet; October 1 – May 31</li> <li>• Schaghticoke: 0.5 feet year round</li> </ul> <p><b>Annual Whitewater Releases</b> have been initiated in 2004 (the first annual release was April 21, 2004) in accordance with the FERC license and Offer of Settlement (which required the whitewater study and consultation that occurred in 2003).</p>	
<p>2) If there is no flow condition recommended by any Resource Agency for the Facility, or if the recommendation was issued prior to January 1, 1987, is the Facility in Compliance</p>	<p>YES = Pass, go to B NO = Go to A3</p> <p style="text-align: center;">N/A</p>	

with a flow release schedule, both below the tailrace and in all bypassed reaches, that at a minimum meets Aquatic Base Flow standards or “good” habitat flow standards calculated using the Montana-Tennant method?		
3) If the Facility is unable to meet the flow standards in A.2., has the Applicant demonstrated, and obtained a letter from the relevant Resource Agency confirming that demonstration, that the flow conditions at the Facility are appropriately protective of fish, wildlife, and water quality?	YES = Pass, go to B  N/A	NO = Fail
<b>B. Water Quality</b>	PASS	FAIL
1) Is the Facility either:  a) In Compliance with all conditions issued pursuant to a Clean Water Act Section 401 water quality certification issued for the Facility after December 31, 1986? Or  b) In Compliance with the quantitative water quality standards established by the state that support designated uses pursuant to the federal Clean Water Act in the Facility area and in the downstream reach?	<i>YES = Go to B2</i>  <b>Yes</b> – The Hoosic River Project is in compliance with all conditions pursuant to the Clean Water Act Section 401 Water Quality Certification (WQC) issued for the Project on September 19, 2002. The Section 401 WQC is conditioned on compliance with the terms of the Settlement Agreement.	NO = Fail
2) Is the Facility area or the downstream		

<p>reach currently identified by the state as not meeting water quality standards (including narrative and numeric criteria and designated uses) pursuant to Section 303(d) of the Clean Water Act?</p>	<p><i>YES = Go to B3</i></p> <p><b>Yes</b> – The NYSDEC has identified the Hoosic River in their June 3, 2002 Section 303(d) List as 2(b) waters, or <i>Waters Impaired by Fish Consumption Advisories</i>. The NYSDEC classifies waters of the Hoosic River based on designated best use, or Class C (best use is fishing and all other uses except as a source of water supply for drinking, culinary or food processing purposes, and primary contact recreation).</p>	
<p>3) If the answer to question B.2 is yes, has there been a determination that the Facility does not cause, or contribute to, the violation?</p>	<p><i>YES = Pass</i></p> <p><b>Yes</b> – The NYSDEC Section 303(d) List indicates contaminated sediments as a source of PCBs. The list was provided with the 2009 recertification submittal.</p>	<p>NO = Fail</p>
<p><b>C. Fish Passage and Protection</b></p>	<p>PASS</p>	<p>FAIL</p>
<p>1) Are anadromous and/or catadromous fish present in the Facility area or are they known to have been present historically?</p>	<p><i>YES = Go to C2</i> <i>NO = Go to C</i></p> <p style="text-align: center;">Yes</p>	
<p>2) Is the Facility in Compliance with Mandatory Fish Passage Prescriptions for upstream and downstream passage of anadromous and catadromous fish issued by Resource Agencies after December 31, 1986?</p>	<p><i>YES = Go to C5 Error: Should read C6</i></p> <p><b>Yes</b> – By letter dated May 24, 1996, the Department of Interior (DOI) once prescribed upstream and downstream passage for American Eel at Schaghticoke and reserved authority for same at Johnsonville. However, by letter dated August 28, 2002, the DOI indicated that the Offer of Settlement (signed by DOI in July 2002) superceded the terms and conditions prescribed in their May 24, 1996 letter, and stated that their 1996 Section 18 prescription should be considered modified to conform to specifications contained in the Offer of</p>	<p>NO = Fail</p>

	<p>Settlement. The FERC license and Offer of Settlement require the phased installation of upstream eel conveyance and downstream fish movement systems at both Johnsonville and Schaghticoke. Installation of fish protection and upstream eel conveyance systems at both Johnsonville and Schaghticoke were completed in 2006.</p>	
<p>3) Are there historic records of anadromous and/or catadromous fish movement through the Facility area, but anadromous and/or catadromous fish do not presently move through the Facility area (e.g., because passage is blocked at a downstream dam or the fish no longer have a migratory run)?</p> <p>a) If the fish are extinct or extirpated from the Facility area or downstream reach, has the Applicant demonstrated that the extinction or extirpation was not due in whole or part to the Facility?</p> <p>b) If a Resource Agency Recommended adoption of upstream and/or downstream fish passage measures at a specific future date, or when a triggering event occurs (such as completion of passage through a downstream obstruction or the completion of a specified process), has the Facility owner/operator made a legally enforceable commitment to provide such passage?</p>	<p>YES = Go to C2a NO = Go to C3</p> <p>YES = Go to C2b N/A = Go to C2b</p> <p>YES = Go to C5 N/A = Go to C3</p>	<p>NO = Fail</p> <p>NO = Fail</p>
<p>4) If, since December 31, 1986:</p>	<p>NO = Go to C5</p>	<p>YES = Fail</p>

<p>a) Resource Agencies have had the opportunity to issue, and considered issuing, a Mandatory Fish Passage Prescription for upstream and/or downstream passage of anadromous or catadromous fish (including delayed installation as described in C.3.a above), and</p> <p>b) The Resource Agencies declined to issue a Mandatory Fish Passage Prescription,</p> <p>c) Was a reason for the Resource Agencies' declining to issue a Mandatory Fish Passage Prescription one of the following: (1) the technological infeasibility of passage, (2) the absence of habitat upstream of the Facility due at least in part to inundation by the Facility impoundment, or (3) the anadromous or catadromous fish are no longer present in the Facility area and/or downstream reach due in whole or part to the presence of the Facility?</p>	<p>N/A = Go to C4</p>	
<p>5) If C4 was not applicable:</p> <p>a) Are upstream and downstream fish passage survival rates for anadromous and catadromous fish at the dam each documented at greater than 95% over 80% of the run using a generally accepted monitoring methodology? Or</p>	<p>YES = Go to C6</p>	<p>NO = Fail</p>

<p>b) If the Facility is unable to meet the fish passage standards in 5.a, has the Applicant either i) demonstrated, and obtained a letter from the U.S. Fish and Wildlife Service or National Marine Fisheries Service confirming that demonstration, that the upstream and downstream fish passage measures (if any) at the Facility are appropriately protective of the fishery resource, or ii) committed to the provision of fish passage measures in the future and obtained a letter from the U.S. Fish and Wildlife Service or the National Marine Fisheries Service indicating that passage measures are not currently warranted?</p>		
<p>6) Is the Facility in Compliance with Mandatory Fish Passage Prescriptions for upstream and/or downstream passage of Riverine fish?</p>	<p>YES = Go to C7 (<i>corrected from C6</i>)  N/A = Go to C7</p> <p>Yes – The FERC license and Offer of Settlement require provision of an alternate route of downstream fish movement. At Schaghticoke, this alternate route is presently afforded via the agreed upon 60 cfs bypass flow implemented in February 2004 through a notch in the wooden flashboard system. The fish protection measures have also been implemented at Johnsonville whereby the agreed upon 20 cfs release is provided via small gate within the sluice gate.</p>	<p>NO = Fail</p>
<p>7) Is the Facility in Compliance with Resource Agency Recommendations for Riverine, anadromous and catadromous fish entrainment protection, such as tailrace barriers?</p>	<p>YES = Pass, go to D  N/A = Pass, go to D</p> <p>Yes – The FERC license and Offer of Settlement required the</p>	<p>NO = Fail</p>

	installation of fish protection measures at the facility trashracks. One inch clear spaced trash racks have been installed at both facilities as agreed upon with the FERC, USFWS, and NYSDEC.	
<b>D. Watershed Protection</b>	PASS	FAIL
1) Is there a buffer zone dedicated for conservation purposes (to protect fish and wildlife habitat, water quality, aesthetics and/or low-impact recreation) extending 200 feet from the average annual high water line for at least 50% of the shoreline, including all of the undeveloped shoreline?	YES = Eligible for 3 extra years of certification; Go to D4  No	NO = Go to D2
2) Has the Facility owner/operator established an approved watershed enhancement fund that: 1) could achieve within the project's watershed the ecological and recreational equivalent of land protection in D.1, and 2) has the agreement of appropriate stakeholders and state and federal resource agencies?	YES = Eligible for 3 extra years of certification; Go to D4  No	NO = Go to D3
3) Has the Facility owner/operator established through a settlement agreement with appropriate stakeholders, with state and federal resource agencies agreement, an appropriate shoreland buffer or equivalent watershed land protection plan for conservation purposes (to protect fish and wildlife habitat, water quality, aesthetics	YES = Go to D4  No	NO = Go to D4

and/or low impact recreation)?		
4) Is the facility in compliance with both state and federal resource agencies recommendations in a license approved shoreland management plan regarding protection, mitigation or enhancement of shorelands surrounding the project?	<p>YES = Pass, go to E  N/A = Pass, go to E</p> <p>Yes – The facility is in compliance with all regulatory requirements as agreed to, and as required in the FERC license and Offer of settlement.</p>	No = Fail
<b>E. Threatened and Endangered Species Protection</b>	PASS	FAIL
1) Are threatened or endangered species listed under state or federal Endangered Species Acts present in the Facility area and/or downstream reach?	<p>YES = Go to E2  NO = Pass, go to F</p> <p>No – Except for occasional transient species, there are no state or federal threatened or endangered fish, wildlife or plant species present in the Hoosic River Project area or downstream reaches. The statement from NYSDEC, and USFWS was included with the original LIHI application, and, to the best of Erie’s knowledge, remains current.</p>	
2) If a recovery plan has been adopted for the threatened or endangered species pursuant to Section 4(f) of the Endangered Species Act or similar state provision, is the Facility in Compliance with all recommendations in the plan relevant to the Facility?	<p>YES = Go to E3  N/A = Go to E3</p>	NO = Fail
3) If the Facility has received authorization to incidentally Take a listed species through:	YES = Go to E4	NO = Fail

<p>(i) Having a relevant agency complete consultation pursuant to ESA Section 7 resulting in a biological opinion, a habitat recovery plan, and/or (if needed) an incidental Take statement; (ii) Obtaining an incidental Take permit pursuant to ESA Section 10; or (iii) For species listed by a state and not by the federal government, obtaining authorization pursuant to similar state procedures; is the Facility in Compliance with conditions pursuant to that authorization?</p>	<p>N/A = Go to E5</p>	
<p>4) If a biological opinion applicable to the Facility for the threatened or endangered species has been issued, can the Applicant demonstrate that:</p> <p>a) The biological opinion was accompanied by a FERC license or exemption or a habitat conservation plan? Or</p> <p>b) The biological opinion was issued pursuant to or consistent with a recovery plan for the endangered or threatened species? Or</p> <p>c) There is no recovery plan for the threatened or endangered species under active development by the relevant Resource Agency? Or</p> <p>d) The recovery plan under active</p>	<p>YES = Pass, go to F</p>	<p>NO = Fail</p>

development will have no material effect on the Facility's operations?		
5) If E.2 and E.3 are not applicable, has the Applicant demonstrated that the Facility and Facility operations do not negatively affect listed species?	YES = Pass, go to F	NO = Fail
<b>F. Cultural Resource Protection</b>	<b>PASS</b>	<b>FAIL</b>
1) If FERC-regulated, is the Facility in Compliance with all requirements regarding Cultural Resource protection, mitigation or enhancement included in the FERC license or exemption?	<p>YES = Pass, go to G  N/A = Go to F2</p> <p>Yes – The facilities of the Hoosic River Project are in compliance with all requirements regarding cultural resource protection, mitigation, or enhancement included in the FERC license. A Programmatic Agreement addressing historical/cultural issues is in place, and Erie has prepared a Cultural Resources Management Plan (CRMP) in consultation with the New York State Office of Parks, Recreation, and Historic Preservation.</p>	NO = Fail
2) If not FERC-regulated, does the Facility owner/operator have in place (and is in Compliance with) a plan for the protection, mitigation or enhancement of impacts to Cultural Resources approved by the relevant state or federal agency or Native American Tribe, or a letter from a senior officer of the relevant agency or Tribe that no plan is needed because Cultural Resources are not	YES = Pass, go to G	NO = Fail

negatively affected by the Facility?		
<b>G. Recreation</b>	PASS	FAIL
1) If FERC-regulated, is the Facility in Compliance with the recreational access, accommodation (including recreational flow releases) and facilities conditions in its FERC license or exemption?	YES = Go to G3 N/A = Go to G2  Yes – the facilities of the Hoosic River Project are in compliance with the access, accommodation, and facilities conditions in its FERC license.	NO = Fail
2) If not FERC-regulated, does the Facility provide recreational access, accommodation (including recreational flow releases) and facilities, as Recommended by Resource Agencies or other agencies responsible for recreation?	YES = Go to G3	NO = Fail
3) Does the Facility allow access to the reservoir and downstream reaches without fees or charges?	YES = Pass, go to H Yes – free access to the river.	NO = Fail
<b>H. Facilities Recommended for Removal</b>	PASS	FAIL
1) Is there a Resource Agency Recommendation for removal of the dam associated with the Facility?	NO = Pass, Facility is Low Impact  No	YES = Fail