

**Ombla Hydropower Plant, Croatia
Summary of Comments¹ and Responses**

<i>Number</i>	<i>Comment</i>	<i>Response</i>
Comments related to legal issues		
1	Why must there be a “big brother” that requires more than Croatian law requires?	All projects supported by EBRD financing are required to meet EBRD’s 2008 Environmental and Social Policy. For the Ombla HPP project, HEP has agreed to an Environmental and Social Action Plan (ESAP) that is intended to ensure the project meets EBRD’s Policy and its associated Performance Requirements.
2	The Ombla HPP project is based upon an Environmental Impact Assessment (EIA) which dates from 1999. Since this time major changes in legislation and the social, environmental and political situation have occurred.	<p>HEP recognizes that conditions are different at present than at the time of the original EIA. However, it is important to note that the Ministry of Environment, Spatial Planning, and Construction found the EIA met then-current requirements and has stated that the permits issued as a result of the 1999 EIA and further required studies remain valid. This Ministry and the Ministry of Culture have also reported there is no legal basis under Croatian law to require further studies or assessments.</p> <p>At the same time, the ESAP to which HEP has agreed, and which will be part of the legal financing agreement with EBRD, will not allow construction that will affect the areas proposed for protection as Natura areas until a biodiversity study equivalent to an Appropriate Assessment under the EU Habitats Directive is completed and there is adequate mitigation to the integrity and the conservation objectives of the sites, or compensation to ensure overall coherence of the Nature 2000 network is protected. See also the response to comment 12.</p>
3	If the project proceeds based on the 1999 EIA, it will be challenged in a Court of Law.	This is the privilege of the commenter. Also, please see the second part of the response to comment 2.
4	The legitimacy of the 1999 EIA procedure is compromised because a member of the EIA evaluating commission,	It is understood that Prof. dr. Bonacci was co-author of the study "Hydrological Analysis", and that specifically, he was the author of Appendix 4 to the study "The

¹ Comments presented here are taken from comment letters received by HEP and EBRD, and from comments made at public consultation meetings in Dubrovnik and Zagreb. In most cases, comments are summarized or paraphrased, and in many cases comments made by more than one person or organization are paraphrased as a single comment. Specific comments on statements and sections of the 1999 EIA are not summarized in detail, nor are species lists or descriptions of other projects. Instead, the purpose is to capture the intent of the comments in a way that the response could be meaningful.

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	<p>Prof. dr. Bonacci, was dismissed from the commission because he strongly opposed the project. After his replacement, the evaluation commission gave a green light to the EIA.</p>	<p>Ombla Low Flows" (June 1994). He also was a member of the Commission to review the Environmental Impact Study, which was formed by the Ministry, where he was responsible for the hydrological background data of the project. There have been conflicting reports of whether he was dismissed from the Commission because he would not support its decision or, having disagreed with the conclusions formulated by the other members of the Commission, he refused to sign the Minutes and resigned in protest. At this point in time, it may not be possible to determine what actually transpired. What is important now, however, is that technical due diligence review by an international consultant has determined the project's hydrological analyses and other technical aspects are sufficient to go forward.</p>
<p>5</p>	<p>The EBRD in its Country Strategy for Croatia recognizes that "efforts to implement the SEA need to be stepped up" but by financing the energy sector boosts further breaches of the EU and Croatian SEA legislation, since the Croatian Energy Strategy, one of the most important state programmes with the most significant environmental impacts, still has not been subject to a Strategic Environmental Assessment procedure.</p>	<p>Under the Environmental Protection Act (OG 110/07), the Government of the Republic of Croatia in June 2008 adopted the Regulation on strategic environmental assessment of plans and programmes (OG 64/08), the Regulation on information and participation of the public and public concerned in environmental matters (OG 64/08) and the Ordinance on the Committee for Strategic Assessment (OG 70/08), with which the provisions of Directive 2001/42/EC on the assessment of the effects of certain plans and programmes on the environment were fully transposed into Croatian legislation.</p> <p>EBRD acknowledges the importance and benefits of Strategic Environmental Assessment (SEA) as a key tool for sustainable development and for assessing the cumulative impacts of plans and programmes on the environment, including SEAs prepared according to EU SEA Directive or the Protocol on Strategic Environmental Assessment (Kiev, 2003) to the Convention on Environmental Impact Assessment (EIA) in a Transboundary Context. Whereas the Bank does not have ownership of such plans and programmes, it will liaise with governments, regional bodies and those multilateral institutions most appropriately placed to use SEAs as a government decision making tool and will structure its projects in accordance with the conclusions of relevant SEAs, where available.</p> <p>Considering the Ombla HPP project itself is not subject to an SEA and that it has valid permits based on the 1999 EIA approval, the completion of the SEA on the Croatian Energy Strategy is not deemed to be a legal requirement for the implementation of the project.</p>

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6	HEP wants to complete the project before EU accession.	This is not the case. In fact, construction is expected to begin no sooner than the latter part of 2012, and will take several years to complete, long after the time of Croatia's accession, which is expected to be in 2013.
<i>Comments related to transboundary issues</i>		
7	The Ministry of Foreign Trade and Economic Relations of Bosnia-Herzegovina has contacted the Republic of Croatia, with its Ministry of Regional Development, Forestry and Water Management, and endeavoured to consider the possible implications that this project may have in altering the water regime and the water table in relation to its natural state in the territory of Bosnia-Herzegovina. Pursuant to relevant ordinances and specific conditions, Bosnia-Herzegovina has granted water rights to Croatia for the hydropower project.	HEP is fully committed to meeting the conditions established by Bosnia and Herzegovina, which are also established as conditions of permits and of the Environmental and Social Action Plan to which HEP and EBRD have agreed.
8	A proper study on the transboundary impacts on groundwater (the project may impact on the territory of Bosnia and Herzegovina) has yet to be undertaken. The aquifer that is to be transformed into a subterranean reservoir lies almost entirely within the territory of Bosnia-Herzegovina, while only its outlet with a narrow spur is in Croatia. All of the negative repercussions to the natural environment will be felt mostly in Bosnia-Herzegovina	The nature of the area's hydrogeologic conditions will prevent significant adverse effects of the hydropower project in Bosnia and Herzegovina. The karst aquifer under Bosnia and Herzegovina is already something of a "reservoir" today in its natural state, and it will not be significantly affected by the Ombla HPP. This natural reservoir is actually a kind of "rocky sponge" which consists of a number of channels, caverns and cracks. Today, in its natural state it is discharging through an underground channel from which water emerges as "river" Ombla; this will not change. HPP Ombla will now be located very close to the end of this channel and will operate as a "run of river" HPP since the entire water flow coming through the channel will go through the HPP. It is not anticipated there will be any significant accumulation of water that is retained or otherwise controlled for any length of time.
9	The permanent raising of the water table in the territory of the city of Trebinje will bring it to within only a few dozen meters from ground level, which will considerably increase the risk of flooding and reduce the capability for operative flood defence. Especially during flash floods,	This Project will have no influence on Trebinje. In fact, it will not affect the water level under Bosnia and Herzegovina east of a dolomite barrier through which water flows toward Croatia. The level of underground waters at a distance of five kilometres from Ombla Spring will not rise above today's natural level. Today's maximum natural level of the underground waters is about 100 meters below the ground surface at the

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	this will threaten people and property.	Trebišnjica river channel (downstream of Trebinje) and this will not change. Thus, the Ombla HPP will not have any effect on flooding in Trebinje. It is important to note that the conditions under which Bosnia and Herzegovina granted water rights to Croatia include a requirement for monitoring water levels under Bosnia and Herzegovina.
<i>Comments related to environmental and social issues</i>		
10	The 1999 EIA is of poor quality, missing many important sections. The independent scholarly public has assessed that the Study does not meet the proper criteria pertaining to either its content or the manner of its approval. [Note: there were some detailed comments on various sections of the EIA said to be incomplete, inadequate, or missing. These are not detailed here.]	The EIA was found to be adequate by the Commission appointed by the Ministry of Environment, Spatial Planning, and Construction, which consisted of 12 members, recognised experts of different scientific disciplines. All decisions were unanimous and none of the members of the Commission expressed a “separate” or dissenting opinion, which was the legal right of the members. See also responses to comments 2 and 12.
11	As regards tourism, the construction work, transport, and access road construction, will degrade the unique landscape of the Ombla. Access roads will be carved visibly and permanently into the rocky amphitheatre above the Spring, whose slope has a large inclination angle and as such requires deep incisions. The slopes are devoid of vegetation, which further increases the visual impacts. The slopes provide the main outlook of protected landscape of the Rijeka Dubrovačka and represent the heart of the landscape. Therefore, this project would only weaken the conditions for tourism development.	There will be roads constructed on the mountainside above Ombla Spring in order to provide access for drilling and grout injection. HEP’s construction techniques will attempt to minimize the areas to be disturbed and thus minimize the visibility of the roads and development activity. All roads that are no longer needed after construction is complete will be removed and the land restored and revegetated. It is very important to note that construction and development activity for the Ombla hydropower project will take place among many other projects that are continuously being undertaken in and near Dubrovnik, so should not have a significant effect on tourism, even temporarily.
12	There are many important species of bats and cave fauna that inhabit the habitat to be affected by the project. While the Environmental and Social Action Plan lists further measures to be taken to study and mitigate the impacts of the HPP, these will be of little use if the decision to build the plant is in any case already made,	As noted in responses to other comments, a further biodiversity study will be undertaken, in part because the site has now been proposed for protection under Natura 2000. This study will include a comprehensive evaluation of data in order to determine if further mitigation is needed, whether specific mitigation measures can reduce or control impacts to an acceptable level, and/or whether compensation should be provided for unavoidable impacts. This process will allow any number of

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	irrespective of the number of affected species and the unlikelihood of avoiding harm to them. Major options are no longer open.	options to be considered, so it cannot be said that options are no longer open. It is important to note that these studies must be completed, and decisions made regarding whether mitigation and/or compensation are sufficient, before EBRD will commit funding for construction that will affect the proposed Natura area and associated conservation values.
13	The constant underground accumulation (the increase of the aquifer volume) will have impact on the seismic activity in an already seismically active region. This could have grave consequences.	The volume of the reservoir is very small in its natural state and this run-of-river HPP will not significantly increase its volume; any increase in aquifer volume will be quite small compared to its current size. The natural underground “reservoir” has been there for millions of years so there should be no increase in seismic activity, certainly not major activity. In general, seismic activity (that is, induced activity) can occur only at newly constructed artificial surface accumulations, where the new accumulations can cause new “tensions” in the surrounding ground, resulting in small earthquakes. This will not be the case for Ombla.
14	The area of Ombla basin is not 600km ² but considerably bigger, between 800-900 m ² . The borders of Ombla basin towards Zaton spring are incorrectly defined in the Study and its most southern parts are 3km to 5km farther east than those marked in the map. Ombla low flows are not marked precisely, they cannot go under 4m ³ /s.	The surface water catchment area is not constant and it changes depending on hydrological conditions in the basin. It can be said to be between about 600-900 km ² . Experiments were conducted to trace underground water from bores Ø19 and O21 in order to precisely define the watershed between the basins of Ombla and Zaton springs. Also, one of the conditions Bosnia and Herzegovina placed on the grant of water rights is that the minimum flow that can be discharged from the plant is 4.0 cubic meters per second.
15	It will be difficult to protect water quality of Ombla Spring during construction and especially during injection of grout. It is unclear if it will be possible to adequately protect the quality of the water that supplies Dubrovnik with potable water.	The construction process has been designed to protect water quality in the river during construction, and to protect drinking water quality. Following construction of the grout curtain “dam”, natural turbidity in the water supply will be reduced. Specifically, construction design includes the following measures: <ul style="list-style-type: none"> - The potable water intake will be moved 250 meters upgradient from the site of works (grout curtain). For this purpose, a completely new water intake with separate intake tunnel will be built (for Vodovod Dubrovnik). - Even in today’s “natural” state, drinking water regularly becomes highly turbid following heavy rains, and thus cannot be used as drinking water. These “pollution”

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		periods typically occur 4-5 times per year and last for 3-4 days. The new plant will eliminate this problem.
16	The Omla hydropower plant is to be situated underground, inside the Vilina špilja – Omla izvor cave system. This would entirely alter and destroy the cave system itself and consequentially annihilate resident subterranean fauna.	<p>This is not the case. No activities will be undertaken in Vilina Cave; in addition, Croatian authorities are requiring steps to be taken to ensure that water levels cannot rise to the level of this Cave, and also to ensure that no construction takes place near the cave when bats are active. There will be some level of effects on the karst cave system. For example, the water level is expected to rise up to 100 meters upgradient of the grout curtain “dam”, and the transition zone that is currently flooded part of the time will move upward. In addition, the portion of the karst downgradient of the grout curtain “dam” will become dry for more of the year than is presently the case.</p> <p>The biodiversity study that will be completed prior to construction will meet the requirements of an Appropriate Assessment under the European Union Habitats Directive, and so will examine potential adverse impacts in more detail, and also will specify actions needed to mitigate or reduce unacceptable impacts, or develop appropriate compensation.</p>
17	The Vilina špilja – Omla izvor cave system is the type locality for a number of species, including some that are found nowhere else in the world. Many species are rare and endangered and some are protected by international convention. Even so, fauna of the cave system is not well understood. Taking into consideration lack of data on cave system fauna in the official documentation, we strongly believe that a comprehensive study on cave fauna should be made before any further action.	The biodiversity study that will be completed prior to construction will meet the requirements of an Appropriate Assessment under the European Union Habitats Directive. This study will, among other objectives, evaluate the adequacy of data needed to make further decisions. See also response to comments 2 and 12.
18	Vilina špilja cave is an exceptional archaeological site of prehistoric, Hellenistic and Roman civilization, and has served as a culture center continuously for over 3000 years, up to 4th century A.C.	No activities will be allowed in the cave, so there will be no effect on cultural heritage.
19	Planned construction would submerge the entire cave system up to 7 meters below the entrance to Vilina špilja,	It is correct that a small part of the floor of the middle Vilina Pećina cave will be flooded. However, even in today’s natural condition a part of Vilina Pećina cave is

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	which would destroy all terrestrial and aquatic cave habitats, with an exception of the first 70 meters of the cave systems.	permanently flooded and one part of the middle floor of Vilina Pećina cave is flooded during high waters. In addition, the part of the upper floor of Vilina Pećina cave, where the bat colony abides, does not currently flood and will not be flooded as a result of the Ombla HPP.
20	Planned construction would completely destroy the first 70 meters of the cave system by building two safety tunnels for water drainage and bat protection in the Vilina špilja cave entrance, which would require a construction of a road to the cave entrance, widening the entrance and introducing a drilling machine in the cave system.	Permits for the Ombla project do not allow any activity in the cave, and will not require widening the entrance or drilling inside the cave. All equipment (and people) will be kept outside the cave entrance. In addition, all activities near the cave entrance will be conducted only from November through April, when bats are not active. Two drainage boreholes, by which small quantities of seepage water are to be evacuated from the lowest parts of the upper floor of Vilina Špilja cave (which is not expected due to hydrogeological characteristics of the surrounding rocks) will not be executed from the cave but from a tunnel above the cave.
21	Planned construction would channel all underground water of Ombla spring in one supply pipe to lead it to the turbine and thus completely destroy aquatic cave fauna.	Upstream of the future underground “dam” , living conditions in the water located in cave areas will remain the same as they are today, without changes. Deep cave areas (syphon) stretching from the underground “dam” to the entrance into the “Spring Cave” will also remain constantly filled with water. Only during the construction period, “Spring Cave” and Ombla Spring , where living conditions typical for surface waterflows prevail, will be drained, and after the commissioning of the plant the waterflow through these areas will be constant under all conditions, even when the power plant is out of operation. It should be noted that the weir at the Ombla Spring needs to be reconstructed regardless of the construction of the Ombla HPP. At the time of reconstruction, a part of the Ombla Spring pond would have to be dried up and drained, which would have the same effect on the freshwater ecosystem that has developed there since the weir was constructed (and which was re-established naturally following the 1960 reconstruction of the weir).
22	Physical conditions in water flows may be changed, and the consequences this would have on karstification (development of subterranean fissures) needs to be understood in order to understand the water	After filling the “underground reservoir“ to a maximum water level of 130 meters above sea level, the level will vary between 130 meters (10 months of the year) and 75 meters (in summer), and the volume of water discharged through the power plant will equal the volume entering the plant reflecting current natural water variations. Excess

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	sustainability of the reservoir.	<p>water that cannot be discharged through the power plant will be evacuated through the vortex spillway.</p> <p>The capacity of cave areas in the underground “reservoir” is actually very small, and their use for energy generation purposes has not been planned. The hydropower plant will constantly discharge the same quantity of water that currently inflows into the plant. Upstream of the underground dam, physical conditions of water flow through natural conduits will be slightly changed with relation to the present state, but generally the same.</p>
23	Later (2007) investigations in Vilina Cave were confined to bats, and the investigation inside the cave was not done properly. Over 50 fauna species and 11 flora species inhabit the cave, of which at least 11 are endemic species	The 2008 study was required only to cover bats. As noted in other responses, the biodiversity study that is to be completed before construction begins will need to evaluate all data on all species. See also responses to comments 2 and 11.
24	Ombla is an important site and place for Croatians: “Ombla is our life and this will destroy our life.”	Construction of the Ombla hydropower plant inside the mountain will not destroy Ombla Spring. Indeed, the dam was first constructed to create a freshwater pond in the early 1900s and then reconstructed in about 1960. Now, 50 years later, the dam has deteriorated and needs to be replaced, even if the hydropower plant is not built.
25	It was recommended that there be systematic interdisciplinary research of the Vilina špilja – Ombla izvor cave system, a program to develop the touristic potential and sustainable management of the system, and protection of Vilina špilja – Ombla izvor cave system as a biological reserve	HEP supports these recommendations, and believes that construction of the Ombla HPP will not necessarily jeopardize the Natura 2000 designation of the cave system. The biodiversity studies to be conducted under the ESAP will develop further mitigation measures to protect the ecosystem, and if necessary compensation for unavoidable impacts. These measures could possibly include provisions for research and for protection.
26	The City of Dubrovnik is supposed to determine sanitary zones but these have still not been announced. There is concern that there will be a highway above the City, and above Ombla.	This is beyond the control of HEP. However, it is important to note that HEP has developed and agreed to implement an Environmental and Social Action Plan for managing all environmental and social impacts, in accordance with Croatian law and EBRD requirements.
27	Where will roads be placed? We saw different access roads on the spatial plan.	The initial plan showed preliminary location for access roads. Since that time, HEP has identified better options. In the end, the contractor will decide where the access roads

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		will go, and HEP will announce this to the public.
	Will the access roads that are built be left for use by the community?	If there is a need and use for new access roads (for example, some access roads may be useful to some landowners to access their land plots which are currently inaccessible because of the difficult terrain), they will be left in place, and existing roads will be left in the same or better condition. Any roads not needed in the future will be removed and the land returned to its natural state.
28	Will construction prevent or delay people from reaching their houses? Will there be road closures? Are there alternative routes?	The primary limitation on road use will be during the six month of construction of the buried channel to carry transmission lines, which is expected to take about six months; during this time, only one lane of the road will be available. However, traffic will never be stopped completely, so it should never be impossible to reach houses. HEP's preference is for most of the traffic to go on the side of the spring where there are no houses (at present only two will need to be acquired by HEP), but it will depend on the contractor.
29	There are other sources of water along the coast. Is there a guarantee that people will not lose these for irrigation? Will there be monitoring?	HEP has compiled a list of the springs that have been and are to be monitored. HEP has baseline measurements for all the springs and is required by the water company to take appropriate measures to deal with any changes that may occur.
30	The Ombla River should be designated as a river of 'state importance', so it can receive more maintenance.	This designation would have to be made by Croatian Water. HEP has no objection and could support such a designation.
31	The sediment needs to be cleared, not only near Ombla Spring but also further down. If the barrier between the sea and the river is moved further down, Croatian Waters would have to clean and maintain the river bed and ensure there is no flooding. We need their assistance to clean the channel. Even if the area around the spring is cleaned, the flooding may be worse further down if there is additional sediment.	HEP will discuss the location of the sea boundary with Croatian Water. HEP will work together with Croatian Water to make sure that sediment is removed if that is necessary to prevent flooding. It is important to note that the sediment load of the river is naturally high, which accounts for the islands in the river.
32	When you complete the HPP, will there be noise from its operation?	There will be some noise from machinery and vehicles during construction. However, there will be no noise above the ground after the plant is constructed and in operation.

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33	Will the digging provoke an earthquake?	No.
34	Is there going to be monitoring of the electromagnetic field? I have heard that Rijeka Dubravačka bay will have more overhead transmission lines. Can these not also be placed underground? We have too many cables above our houses installed a long time ago.	Transmission lines (110kV and 10KV) will be buried under the road from Ombla HPP to the Komolac substation.
35	There have been landslides on the other side. Will these increase because of the Project? What if our property is affected by a landslide?	HEP has undertaken studies of mountain stability and landslides, and does not anticipate there will be any significant landslides. Of course, if a landslide occurs because of the Project, HEP would compensate for the damages.
36	Will the project affect the amount of water that flows through Ombla Spring?	There will be no increase in the quantity of water. The same amount of water will flow through the spring.
37	What will we have to endure for three years?	<p>There will be a six-month preparatory phase for building access roads before construction of the grout curtain and the HPP will begin. The exact schedule will depend on the contractors, but preliminary plans call for construction take about 4.5 years and be finished in 2016.</p> <p>Perhaps the most critical issue during construction will be the increase in traffic for equipment and vehicles. A traffic management plan to be developed and then agreed with the policy will reduce impacts as much as possible. Besides traffic, there will be construction-related noise and dust but again these will be controlled as much as possible.</p>
38	Can HEP use digging machines rather than explosives? What if our houses are affected by the blasting?	The contractors will have to submit their plans to HEP and EBRD for approval. The nature of most of the underground excavations make it necessary to use explosives, although no more blasting will take place than is absolutely necessary. Most importantly, while there will be blasting underground, it should have no effect on the surface.

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Comments related to technical and economic issues

39	<p>There were many comments about the preliminary draft of the technical due diligence draft report. Comments were also made on a later draft. These comments interpreted the report as concluding this project was very risky, technically and economically. The essence of this comment is captured by a statement made at a public meeting: “Why are you going for a project that a technical report for EBRD considers not good?”</p>	<p>The initial draft report on which comments were made at the public consultation meetings was very preliminary and reflected an imperfect understanding of the project by EBRD’s consultant. It was mistaken in its understanding of many project details and in making many of the engineering assumptions; thus its conclusions were similarly incorrect. The later draft on which comments were made was inadvertently labelled “final”, even though it was simply a revision based on partial comments from HEP and EBRD. The updated report has since been released, and it is based on a more thorough understanding of project planning and site conditions.</p> <p>The updated report concludes that the project is economically viable and, based on the feasibility study proposed by HEP, did not highlight any technical fatal flaws.</p> <p>Also, it is important to note that some people at the public meetings appeared to interpret the phrase “risk of failure” as meaning catastrophic failure of the dam, as might be the case for a conventional dam of the size being contemplated here. The phrasing referred to the risk the project would not meet its intended goals (financial and technical); even so, as noted, the conclusion was found to be inaccurate when the consultant gained a better understanding of the project.</p>
40	<p>The technical report was quoted as saying “<i>the project fails to recover both investment outlays and recurrent costs, in fact yielding a considerable cost in commercial terms.... the project could only be implemented if it was heavily subsidized the government.</i>”</p> <p>The report is further quoted as saying “<i>the projects direct and indirect benefits significantly fail to recover all investment and recurrent costs calculated in economic terms and the project yields an economic deficit.</i>”</p>	<p>In the base case scenario, the Technical advisor has estimated the levelised cost of the project at 65 EUR/MWh over a conservative 25 year project lifetime. This is on the low side of typical levelised cost range for renewables, large hydro and thermal power plants.</p> <p>In addition, the updated version of the technical report concluded that the project is unambiguously economically viable with an EIRR of 12% in the base case. Quote: “<i>In the base case the EIRR is of 12% and in the worst scenario considered it is of 10.4%, which still shows the project economically viable</i>”</p> <p>The Bank can thus conclude that the Ombla project is competitive on the power market and makes economically sense for Dubrovnik region and Croatia.</p>
41	<p>While it is promoted as providing additional electricity</p>	<p>Although the Ombla HPP will be operated as a run-of-river plant, the new HPP with its</p>

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	<p>and drinking water for Dubrovnik, the consultants' study points out <i>"tourist season in Dubrovnik coincides with the dry season, the impact of Ombla on the development of tourism in terms of alleviating the water shortage and power deficit in summer time can be considered as peripheral."</i></p>	<p>limited additional water reservoir may help to smooth flood and dry season impact. At present, the quality of water from the spring does not meet drinking water standards during flood periods. Development of the Ombla HPP will increase the capacity of water supply threefold and its reliability thanks to redundant water intakes, regardless of the season (wet or dry). It will also improve the quality of water. These improvements will enhance the long-term security of continuous water supply and consequently development of tourism and the economy. In addition, the additional electricity will improve the reliability of the Dubrovnik regional network at any time during the year.</p>
<p>42</p>	<p>The Tractebel study has concluded that: <i>"The very concept of the project – raising the water pressure in a karstic massif and keeping it there for energy generation purposes – is very daring.... All the factors of the project must be aware of its experimental nature and accept higher levels of risk and less control of the construction time and cost than in "common" hydroelectric projects. Undertaking the project in full, as designed at present, carries a high risk of the project not achieving its objectives...."</i></p>	<p>Based on the updated TDD report, the Technical Advisor, Tractebel, has found no fatal flaws in the proposed project development as a result of its site visit and review of the documentation. Tractebel acknowledges the fact that all the studies were performed thoroughly and with a professional approach, in line with international standards. Tractebel agrees with the main outcomes of the Project's studies and confirms that, under the proposed assumptions, the Project is economically viable.</p> <p>Excerpts from the report read as follows:</p> <ul style="list-style-type: none"> - <i>The project has been studied over more than 20 years, as it may be observed from records and publications. The unusual concepts of its design have been thought over by many people, in different occasions. The site was instrumented in several periods since the early 1990's and monitoring information was collected. All this is commendable, the project design was approached with seriousness and inventiveness. (...)</i> - <i>The hydrological and geological studies used for the feasibility study, as provided by HEP, are comprehensive enough for the design of the hydroelectric scheme. The geotechnical and structural studies are sufficient for contracting for construction. (...)</i> - <i>The design of the grout curtain forming the dam is considered adequate, to the extent that assumptions on methods and grout takes may be made without any field trials. (...)</i> - <i>The very concept of the project – raising the water pressure in a karstic massif and keeping it there for energy generation purposes - is unusual and challenging.</i>

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		<ul style="list-style-type: none"> - Several grout curtains have been constructed in Dinaric karst within the foundations of above-ground dams, of surface areas similar to the Ombla HPP grout curtain. - To date, several underground reservoirs in karst have been constructed by flooding large spring areas, such as the Grančarevo dam in Bosnia and Herzegovina, which is 75 meters; the Oymapinar 120 meter dam in Turkey (Dumanli spring); and the Naraidha dam in Greece, 40 meters. - In the period from 1979 to 2003, the following underground dams have been constructed on Japanese islands: Minafuku; Sunagawa; Fukusato; Kikai; Komesu; Giiza and Kanjin, with lengths ranging from 500 to 2489 m and heights ranging from 16.5 to 80 m, and which serve for water supply purposes and irrigation - In the People’s Republic of China, the following hydropower plants have been constructed: Linlangdong, Yuong and Beliou.
43	Tractebel proposes to do the construction in stages. HEP does not appear to have any intention of adopting this suggestion.	<p>The project will be implemented in stages. It is important to note that the water rights granted by Bosnia and Herzegovina are conditioned upon the following: <i>“Construction of the injection curtain must be planned in phases (a minimum of three phases), while surveillance of the water regime during each phase for a duration of one hydrological year must be secured, with the accompanying analyses.”</i> That is part of the current design.</p> <p>Although reiterating in the last updated version of technical report that the project may be technically feasible as proposed by HEP, the Technical Advisor recommends a cautious approach during phased construction. They draw attention on the fact that the project being constructed in phases will probably leads to some technical changes of methodology in order to take into account the results of the initial ground and grouting testing phases. In the unlikely event of unfavourable tests outcomes, it might lead to downsize dam height and power output. This is a usual “trial-and-error” process for HPP civil works that will be taken into account in the conditions of contract, and monitored by Lender’s Engineer.</p>
44	The Dubrovnik water supply is sourced from Ombla water source region and has been in function for a long time now. Therefore, it will not be a result of this project’s construction.	The capacity of the current water supply system is currently about 500 liters per second. As a result of this project, the capacity will be about 1500 liters per second. In addition the water intake will be moved deeper and higher in the mountain, which will significantly increase the water quality. However the existing water intake will be kept

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		and maintained for redundancy reasons.
45	If the underground water level is raised to 130 meters there would be water overflow from Ombla spring into Zaton spring. As for Slavljan spring basin and Zavrelje spring basin, similar occurrences could happen. The impact of overflow and of considerable and constant flow increase of springs Zaton, Slavljan and Zavrelje, as well as occurrence of other possible springs, create a problem that cannot be understood without further studies. There is a reasonable fear that some of these processes could be harmful for the wider region as well as for the City of Dubrovnik itself.	Following the implementation of a comprehensive hydrogeological research program, the Ombla hydropower plant Expert Council, at its session held on 27 June 1995, ascertained that the water level of 130 meters above sea level not cause water to overflow toward Zaton , Slavljan spring.
46	Why is HEP developing this HPP when it could be using solar energy?	HEP is developing projects using renewable energy sources such as wind, biomass, solar but all these projects are of relatively small scale. HEP has the responsibility to ensure long-term security of supply for almost two million customers and this cannot be done only with solar or wind sources. Moreover, the typical levelised cost of solar projects in the Western Balkans (280 EUR/MWh) is much higher than the levelised cost of an HPP project. As a result, HEP is developing projects with diversified sources that will enable stable energy supply for reasonable price.
47	What guarantees are there and what will you do if you are wrong or there is a mistake. This comment was specifically about flooding but also had wider implications.	HEP has brought the best engineering skills in Croatia to this project. There is no possibility of an increase in flooding. While there is always some uncertainty in project such as this, the final technical due diligence report concluded that the project is well-conceived, studied, and feasible within the proposed time frame.
48	How much of the energy will go to Dubrovnik? How will Dubrovnik benefit?	The facilities will deliver 225GWh electricity annually to Dubrovnik node on the Croatian National Grid. This will increase the security of electricity supply to the region of Dubrovnik that recently suffered from electricity distribution disruption. The Project is also expected to triple the capacity of water supply in the touristic area of Dubrovnik (from 500 l/sec currently to 1,500 l/sec), which will enable stability of water supply in the long term. The Project will allow potable water to be transported to customers by free fall, eliminating the current need for water pumps and reducing water distribution

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		costs to Dubrovnik Municipality. To ensure the reliability of the installation, the raw water will be separately channelled from the reservoir to the potable water treatment plant owned by the City of Dubrovnik. It should be noted that during flood seasons, the current quality of spring's water may not allow to produce drinking water. Based on a new water supply system, a predictable upstream reservoir capacity and the newly built water filtration facility, the quality of raw water for Dubrovnik's potable water generation will be drastically improved from the current status, at any time in the year.
49	Are all the finances secured or will HEP initiate construction even without the full amount being available? Is the loan approved? I read EBRD thinks it is risky.	HEP requires EBRD financing in order to begin and complete construction. Also, the newspaper articles gave the wrong figures. Several newspaper articles in October 2011 were based on a very preliminary draft of a report commissioned by EBRD, which was based on a misunderstanding of the project.
50	How high will the dam be?	The grout curtain "dam" will be 280 meters high, including 130 meters above sea level. It is important to remember, the underground area is not an empty reservoir; but rather is made of rock with many openings, including cracks, caves, and channels. Currently water flows through these openings, so they will be filled with grout to control water flow so it can be used to generate electricity.
51	Economics: How can this project go forward with 37.8% return on investment?	<p><i>See answer to comment 40</i></p> <p>In the base case scenario, the Technical advisor has estimated the the levelised cost of the project at 65 EUR/MWh over a conservative 25 year project lifetime. This is on the low side of typical levelised cost range for renewables, large hydro and thermal power plants.</p> <p>The updated version of technical report concluded that the project is unambiguously economically viable with an EIRR of 12% in the base case. Quote: <i>"In the base case the EIRR is of 12% and in the worst scenario considered it is of 10.4%, which still shows the project economically viable"</i></p> <p>The Bank can thus conclude that the Ombla project is competitive on the power market and makes economically sense for Dubrovnik region and Croatia.</p>

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52	Where will the material that is excavated be put?	The plan is to transport all rock material from the excavation to the existing quarry Dubac, where it can be used for the production of construction material. The final decision will be reached in cooperation with the selected contractor.
<i>Comments related to stakeholder engagement and public consultation</i>		
53	The EIA consultation period was in 1999. There was no consultation following the bat study required by the permits granted as a result of the EIA, which makes the process not legal. One commenter cited provisions of the Aarhus Convention to support this position.	Disclosure and public comments on the required bat study was not required by the Ministry of Environment, Spatial Planning, and Construction or the Ministry of Culture. However, it is important to note that the study was disclosed for public review and comment on 25 May 2011 for a 120-day disclosure period.
54	Under the Stakeholder Engagement Plan, new consultation meetings were in September and October 2011 on the Environmental and Social Action Plan, Stakeholder Engagement Plan, and Non-Technical Summary of the EIA. All these documents have already been published, and there is therefore no meaningful process in place which would ensure the incorporation of comments received or explanation as to why they have not been included.	Other documents disclosed for public comments were the 1999 EIA, 2008 bat study, and the 2011 Land Acquisition and Compensation Framework. With the exception of the EIA and the bat study, all documents were labeled as “draft” and may be revised as a result of the recently concluded public comment period. This comment-response document is explaining how comments are being and will be addressed.
55	The fact that additional studies are to be conducted appears to mean that little is known about the current ecological situation at the site. It is therefore difficult for stakeholders concerned with the ecological impacts to give meaningful input, and there is no guarantee that further consultations will be held that would correct this situation later on. Even if there are further consultations the project may be at too advanced a stage to incorporate properly the recommendations.	Quite a lot is known about the site, since it has been subject to studies for decades, including studies for the 1999 EIA and the 2008 bat study, as well as further studies in 2011. The further biodiversity studies that will be completed are not because “little is known” but rather because the site has now been proposed for protection under Natura 2000. As a result, a comprehensive evaluation of data is required in order to determine if further mitigation is needed, whether mitigation can reduce or control impacts to an acceptable level, and/or whether compensation can provide for unavoidable impacts on these areas and their conservation values. It is important to note that these studies must be completed, and decisions made regarding whether mitigation and/or compensation are sufficient before EBRD will commit funding for construction that will affect the proposed Natura area. Thus, it is not accurate to say the project is “at too advanced a stage” to consider the results of

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		the study and the results of further consultations that will be held upon disclosure of the study. See also responses to comments 2 and 12.
56	For 12 years, HEP did not communicate with us, but now because of EBRD HEP is having meetings. This is not convincing.	From the time of the consultations following the 1999 EIA, project planning proceeded slowly, but there was never a specific schedule for development. Only in recent years has HEP begun to develop schedules and detailed plans, and that in turn led to further consultations such as have been held this year. When HEP approached EBRD for financing, it was required that the project become subject to the EBRD's Environmental and Social Policy, which requires extensive stakeholder engagement. HEP will continue to communicate with stakeholders throughout project construction and operation in accordance with the Stakeholder Engagement Plan.
57	HEP's public information record is poor and obtaining official information from HEP is extremely difficult.	HEP disagrees with this characterization. On this Ombla hydropower project, HEP developed the Stakeholder Engagement Plan and will communicate with stakeholders throughout the project's construction and operation. In addition HEP has established a communication system at the corporate level – it is already available, where questions can be addressed (data on HEP's web site)
58	Why did HEP have three public consultation meetings instead of one? Was it to keep people apart?	HEP determined that five meetings would be the best approach for this project. There were five meetings, including meetings primarily for (1) local authorities in Dubrovnik, (2) general public, (3), nongovernmental organizations in Dubrovnik, (4) national organizations in Zagreb, and (5) people near Ombla Spring who could be directly affected by the project. The reasons for the different meetings was, first, to make sure that there were not too many people at any one meeting to allow anyone to speak; and second, because each group would have its own concerns that could be best expressed in a more focused meeting.
59	Why did you invite us to this meeting? We think it was because we wrote a letter to EBRD asking the Bank not to approve the financing.	The Stakeholder Engagement Plan developed by HEP identified a key stakeholders, including individuals, organizations, and agencies. The Plan called for notifying these stakeholders prior to the consultation meetings. No one was invited or notified simply because they wrote a letter to EBRD.
60	"What is replacement land?" HEP has not talked to any land owners. "The times when you could just take land	HEP is completing the process of identifying land areas and landowners where work will take place or roads will be constructed. HEP has begun communicating directly

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	are finished”	with people who will be directly affected, including landowners. HEP has developed a plan for Land Acquisition and Compensation that describes the process that will be followed in dealing with landowners and others who suffer economic or other losses. This process will meet the requirements of Croatian law and international best practice, including EBRD’s requirements.
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