

# The Upper Horizons complex, Bosnia and Herzegovina



Photo: Andrey Ralev, CEE Bankwatch Network

## Key issues

- The Lower Horizons complex has already damaged biodiversity in eastern Herzegovina. Upper Horizons, if built, would further its destruction.
- It would be built in Republika Srpska but would also damage key karst rivers in the Federation of Bosnia and Herzegovina and Croatia.
- The *Hutovo Blato* Ramsar Site would be left with even less water than now, leading to its complete destruction.
- Croatia's Neretva delta would be left with less water, leading to increased salinisation.
- The *Gatačko*, *Nevesinjsko*, *Dabarsko* and *Fatničko* karst fields, all of them Emerald sites, would be converted from rich wetlands to artificially drained land and reservoirs.

For more information

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## Project overview

The Upper Horizons complex or *Gornji Horizonti* has been planned since the mid-20th century and is a continuation of *Donji Horizonti* or the Lower Horizons complex, which was built from the 1960s to the 1980s. Lower Horizons consists of four hydropower plants:

- Trebinje I (168 megawatts (MW)) and Trebinje II (8 MW), now owned and managed by *Elektroprivreda Republike Srpske* (ERS);<sup>1</sup>
- Čapljina pumped storage plant (420 MW), now owned and managed by *Elektroprivreda Hrvatske zajednice Herceg Bosne* (EP HZHB);<sup>2</sup>
- Dubrovnik (2 x 126 MW; 117.5 MW each when both turbines are running).<sup>3</sup> Its powerhouse is in Croatia, and it is run by *Hrvatska Elektroprivreda* (HEP), though one of the two turbines produces electricity for Bosnia and Herzegovina.<sup>4</sup>

In order to build the system, a series of tunnels and reservoirs were built and the river Trebišnjica was kept on the surface in the *Popovo polje* karst field by converting it into a concrete channel, instead of going underground in multiple sinkholes as it used to. From the Grančarevo dam, which forms the artificial Bileća reservoir, the water is diverted in two directions: towards Dubrovnik, via the Trebinje reservoir, formed by the Gorica dam, and then via an 18 kilometre tunnel; and towards Čapljina. The southern part of the *Hutovo blato* wetland has been converted into an artificial reservoir (Svitavsko lake) that is used as part of the Čapljina pumped storage plant.

The Upper Horizons complex is planned to consist of three hydropower plants:

- Dabar (160 MW)<sup>5</sup>
- Nevesinje (60 MW)
- Bileća (32 MW)

This will require two new reservoirs with multiple dams (planned), four diversion tunnels (two built, one under construction, one planned), one pumping station (planned to divert water from *Gatačko polje*), and four karst fields drained by large channels (*Fatničko* built, *Dabarsko* and *Nevesinjsko* were supposed to start construction in 2023 but are delayed; *Gatačko* is planned).

Dabar is the first plant planned to be fully built; Bileća is being pursued next, and preparations for the Nevesinje plant do not seem to have started at all.

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<sup>1</sup> HE na Trebišnjici, [HE Trebinje I](#) and [HE Trebinje II](#), accessed 3 September 2023.

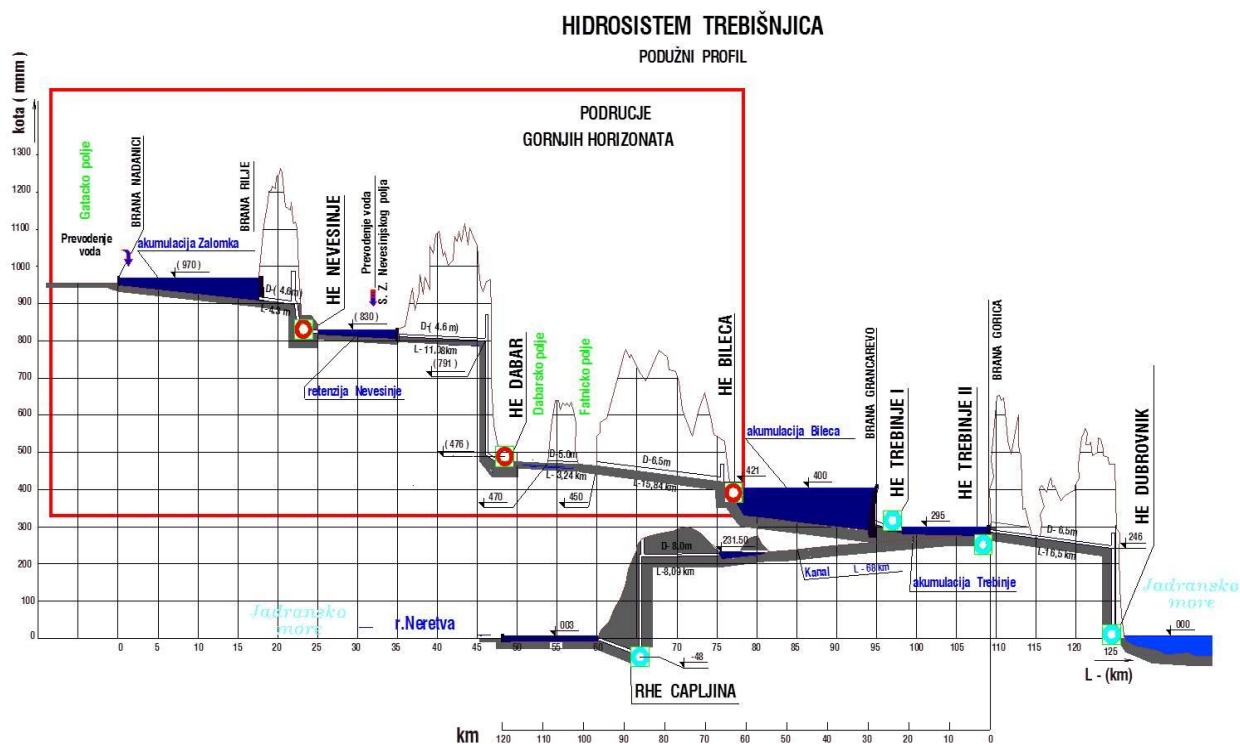
<sup>2</sup> JP Elektroprivreda Hrvatske zajednice Herceg Bosne, [30 Godina CHE Čapljina](#), 2009.

<sup>3</sup> Hrvatska Elektroprivreda, [HE Dubrovnik](#), accessed 3 September 2023.

<sup>4</sup> Hrvatska Elektroprivreda, [Annual Report 2022](#), 2023.

<sup>5</sup> Elektroprivreda Republike Srpske, [Hidroelektrana Dabar](#), accessed 3 September 2023.

The diagram below presents the Upper Horizons and Lower Horizons complexes and their relationship to one another.



Scheme of dams and associated planned or existing infrastructure. In red is Upper Horizons, from Bileća reservoir downstream is Lower Horizons. Source: [Dabar EIA](#), 2012.

### The Dabar hydropower plant

The Dabar hydropower plant is the most advanced and largest of the Upper Horizons plants, and if completed, will have major impacts. It consists of the main dam (Pošćenje) which would create the Nevesinje reservoir; two major dikes (Grebak and Vranjača); a 12.1-kilometre derivation tunnel (already mostly built); an underground water tank; a high-pressure pipeline; and a powerhouse, 6-kilometre channel across the Dabar karst field and permanent access roads.<sup>6</sup>

Its annual generation expected to be 251.8 gigawatt hours (GWh),<sup>7</sup> which would only equal five per cent of all electricity generated in Republika Srpska in 2022 and less than 1.7 per cent of Bosnia and Herzegovina’s total electricity generation in the same year.<sup>8</sup>

In reality, it will likely be even less, as ERS has a history of using outdated water data to plan its hydropower plants, and Bosnia and Herzegovina’s hydropower output has fluctuated significantly in recent years.

<sup>6</sup> Republika Srpska Ministry for Spatial Planning, Construction and Ecology, [Decision no. 5.04-96-216/12 of 03.12.2012](#).

<sup>7</sup> ERS, [Hidroelektrana Dabar](#), ERS, accessed 23 September 2023.

<sup>8</sup> Calculated from Bosna i Hercegovina Državna Regulatorna Komisija za Električnu Energiju, [Izveštaj u radu Državne Regulatorne Komisije za Električnu Energiju u 2022. godini](#), December 2022, 87.

Between 2010 and 2021, despite the addition of numerous small hydropower plants and the Bočac II generator, average annual hydropower generation in Bosnia and Herzegovina decreased.<sup>9</sup>

## Concessions, main contractors and financing

### Dabar

On 19 April 2011 the government of Republika Srpska awarded a concession for the construction and operation of the Dabar hydropower plant to *Hidroelektrana na Trebišnjici a.d. Trebinje*, a 76 per cent owned subsidiary of *Elektroprivreda Republike Srpske (ERS)*.<sup>10</sup> A special purpose vehicle was set up to implement the project: *Hidroelektrana Dabar d.o.o. Trebinje*, 100 per cent owned by *Hidroelektrane na Trebišnjici*.<sup>11</sup> On 28 July 2011 Republika Srpska and *Hidroelektrana Dabar d.o.o. Trebinje* signed the concession contract.<sup>12</sup>

The overall cost of the Dabar project cited in early 2022 was BAM 661 million, or around EUR 338 million.<sup>13</sup>

The first major contract – for the derivation tunnel from Nevesinjsko polje to the Dabar hydropower plant – was awarded to Integral Inženjering, owned by the late Slobodan Stanković. A close associate of the Republika Srpska president Milorad Dodik, Stanković was placed on the US sanctions list prior to his death in early 2023.<sup>14</sup>

The tender appears to have had no other bidders.<sup>15</sup> The costs for the tunnel cited at the start of works in 2016 varied between BAM 112-131 million (EUR 56-67 million).<sup>16</sup> The tunnel was supposedly financed from *Hidroelektrana na Trebišnjici*'s own resources,<sup>17</sup> but given the amounts involved, it would be rather surprising if the company had been able to do this without additional support from the state or bank loans.

On 31 December 2019, a call for final bids for the financing and construction of the rest of the Dabar hydropower plant was issued, and only China Gezhouba Group Co. Ltd. submitted a bid by 1 April 2020. The Commission assessing the bid recommended Gezhouba as the most favourable bidder on 16 April 2020. On 4 May 2020 an engineering, procurement, construction and financing contract was signed between *Hidroelektrana Dabar d.o.o.* and Gezhouba for the remaining parts of the Dabar hydropower plant, worth a total of EUR 222 834 120.<sup>18</sup>

<sup>9</sup> CEE Bankwatch Network, [Why hydropower in southeast Europe is a risky investment](#), CEE Bankwatch Network, July 2022.

<sup>10</sup> [Banja Luka Stock Exchange](#), last updated 13 April 2023.

<sup>11</sup> As stated in the loan guarantee approval decision.

<sup>12</sup> Republika Srpska Commission for Concessions, [Annual Report 2021](#), Republika Srpska Commission for Concessions, April 2022.

<sup>13</sup> Daria Sito-Sučić, [Bosnia's HE Dabar seals deal with China's Exim bank for 160 MW hydropower plant](#), Reuters, 5 January 2022.

<sup>14</sup> Natalija Jovanović, [Balkanski poslovi sankcionisanog Slobodana Stankovića](#), Radio Slobodna Evropa, 6 October 2022.

<sup>15</sup> S. Vukelić, [„Integral“ dobio još jedan državni posao – 135 miliona za tunele „HE Dabar“](#), Capital.ba, 6 June 2016.

<sup>16</sup> Bljesak info, [Nevesinje: Započeli glavni radovi na HE Dabar](#), Bljesak info, 1 September 2016; Integral Inženjering a.d., [HE Dabar: svečano otvoreni radovi na izgradnji pristupnog tunela](#), 5 September 2016; Integral Inženjering a.d., [Izgradnja dovodnog tunela, ulazne građevine i pristupnih tunela HE Dabar i izvođenje istražno projektantskih radova u toku izgradnje \(Republika Srpska, Bosna i Hercegovina\)](#), undated.

<sup>17</sup> E-Trebinje, [Mišeljić: U hidroelektranu „Dabar“ uloženo oko 140 miliona KM](#), E-Trebinje, 14 September 2022.

<sup>18</sup> See [loan guarantee approval decision](#).

In January 2021, an annex to the concession contract was signed, prolonging it from 30 to 50 years.<sup>19</sup>

On 30 December 2021, the Republika Srpska government took a decision to approve the issuance of a loan guarantee for *Hidroelektrana Dabar d.o.o.* as the borrower.<sup>20</sup> The same day, the government also took another decision – in its capacity as ERS shareholder – approving the guarantee and mandating the relevant office-holders of ERS to sign the loan agreement.<sup>21</sup>

The day afterwards, on 31 December 2021, *Hidroelektrana Dabar d.o.o.*, as the borrower, ERS, and the China Eximbank as the lender, signed a loan agreement.<sup>22</sup> The same day, Republika Srpska, represented by the Ministry of Finance, signed a loan guarantee with the China Eximbank, the beneficiary.<sup>23</sup> The loan amount was reported in the media as EUR 180 million, but from the state aid approval document, appears to be for EUR 189.4 million.<sup>24</sup>

It was only on 2 March 2022 that the Ministry for Energy and Mining of Republika Srpska submitted a notification to Bosnia and Herzegovina's State Aid Council for the approval of a Republika Srpska loan guarantee for the project.<sup>25</sup> On 28 April 2022, the Council approved the aid, despite having been notified only after the guarantee had been signed.

To complement the 85 per cent provided by China Eximbank, the project promoter was expected to secure the other 15 per cent. This was reported as being achieved via a share issue for *Hidroelektrane na Trebišnjici*, which enabled the provision of BAM 92.8 million (around EUR 46.4 million).<sup>26</sup> Indeed, in February 2022 a share issue took place, in which one shareholder bought over 180 million shares at a cost of BAM 1 each, raising around EUR 90 million for *Hidroelektrane na Trebišnjici*.<sup>27</sup> The identity of the shareholder was not published.

The level of secrecy around the Dabar project has been very high and the government decisions regarding the loan were taken extremely quickly, right in the last days of 2021 when most people were on holiday. Some basic documents are still unavailable in the public domain, including the loan agreement and the

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<sup>19</sup> Republika Srpska Commission for Concessions, [Annual Report 2021](#).

<sup>20</sup> Odluka Vlade Republike Srpske o davanju saglasnosti za izdavanje garancije Republike Srpske za kreditno zaduženje *Hidroelektrane "Dabar" d.o.o. za proizvodnju i prodaju električne energije Trebinje*, kao zajmoprimca, i *Mješovitog holdinga "Elektroprivreda Republike Srpske" - Matično preduzeće a.d. Trebinje*, kao garanta, kod Izvoznio-uvozne banke Kine za Projekat finansiranja i izgradnje objekata Hidroelektrane "Dabar", Official Gazette of Republike Srpske, no. 120/21.

<sup>21</sup> Odluka Vlade Republike Srpske o davanju garancije HE "Dabar" d.o.o. Trebinje za kredit Export Import

Bank of China za finansiranje 85% EPC Ugovora za izgradnju Hidroelektrane "Dabar" i s tim u vezi za zaključenje Kreditnog sporazuma, no. 04/1-012-2-4047/21 of 30.12.2021.

<sup>22</sup> Kreditni sporazum broj 1341 od 31.12.2021. zaključen između HE "Dabar" kao pozajmljivača, MH "Elektroprivreda Republike Srpske" MP a.d. Trebinje kao garanta i CEXIM banke kao zajmodavca.

<sup>23</sup> Garantni ugovor zaključen dana 31.12.2021. između Republike Srpske, kao garanta, koju zastupa Ministarstvo finansija i CEXIM banke, kao korisnika.

<sup>24</sup> State Aid Council of Bosnia and Herzegovina, [Decision approving the loan guarantee for the Dabar hydropower plant](#), Official Gazette of Bosnia and Herzegovina no. 35/2022, 31 May 2022, 61.

<sup>25</sup> Ibid.

<sup>26</sup> ERO.ba, [Kamen temeljac za HE Dabar](#), ERO.ba, 24 June 2023.

<sup>27</sup> Nezavisne Novine/Capital.ba, ["HE Dabar ide u dokapitalizaciju u iznosu od 42,2 miliona KM"](#), Nezavisne Novine/Capital.ba, 23 August 2022.

guarantee agreement signed with the China Eximbank. Only the decision by the Republika Srpska government approving the loan guarantee was published.<sup>28</sup>

## Bileća

In February 2023, the concession for Bileća was awarded to Hidroelektrane na Trebišnjici.<sup>29</sup> In September 2023, this was followed by news that a memorandum of understanding had been signed between the Minister of Energy and Mining, Peter Đokić, and the China National Aero-Technology International Engineering Corporation (AVIC) to develop the project.<sup>30</sup> AVIC is the same company that is currently building the Bistrice B-1, B-2 and B-3 hydropower plants near Foča and has shown interest in building the Buk Bijela plant on the upper Drina. Such a memorandum generally has no legal weight, but may prejudice any future tender procedures held to choose the contractor, as it clearly indicates a preference for a certain company.

If AVIC or another Chinese company is chosen, it is very likely – although not guaranteed<sup>31</sup> – that Bileća will secure financing from the China Exim Bank or China Development Bank.

## Hydropower plants or protected areas?

The Republika Srpska Spatial Plan up to 2025 (updated in 2015), emphasises the need to move forward with the Dabar and Nevesinje plants, and mentions Bileća as a possible planned plant as well.<sup>32</sup> Conversely, the plan also includes *Dabarsko polje*, *Fatničko polje*, part of *Gatačko polje* and the river Bregava as areas planned for protection as ‘Areas of managed habitat’ (IUCN category 4), and Bilećko lake as a Nature Park (IUCN category 5) by 2025.<sup>33</sup> The spatial plan does not explore or resolve the conflicts between the planned hydroelectric infrastructure and the plans for protected areas.

## Environmental impacts

The Upper Horizons scheme is presented by the project promoter and Republika Srpska government as having benefits for communities in terms of reduced flooding and more consistent river flows throughout the year. However, the potential environmental impacts are hotly debated and may be extremely far-reaching. It is likely they are not all understood due to the complexity of the karst underground.

Before building the Lower Horizons complex, the main underground water connections in eastern Herzegovina were studied with dye testing, but the data is outdated and incomplete. For the Dabar EIA, no new data was collected – a table of 70<sup>34</sup> underground connections between sinkholes and springs is

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<sup>28</sup> [Official Gazette of Republika Srpska no. 120/21](#), 30 December 2021.

<sup>29</sup> Jelisaveta Perišić, [ERS dobio koncesiju za gradnju hidroelektrane Bileća](#), *Balkan Green Energy News*, 17 February 2023.

<sup>30</sup> [Biznis.info, Kineski AVIC gradit će HE Bileća](#), *Biznis.info*, 15 September 2023.

<sup>31</sup> Ulog and the three Bistrice plants near Foča are examples of hydropower projects involving Chinese contractors in Bosnia and Herzegovina which do not appear to have secured funding from Chinese banks.

<sup>32</sup> Ministry for Spatial Planning, Construction and Ecology, [ИЗМЈЕНЕ И ДОПУНЕ ПРОСТОРНОГ ПЛАНА РЕПУБЛИКЕ СРПСКЕ ДО 2025. ГОДИНЕ](#), February 2015, 243, 247.

<sup>33</sup> *Ibid.*, 106-109.

<sup>34</sup> The last two are numbered 89 and 90 but this appears to be a mistake, unless some are missed out in the table.

presented, but the data was collected between 1926 and 1988.<sup>35</sup> The impacts can be divided according to political borders:

**Republika Srpska:** Four unique karst fields in Republika Srpska (the *Gatačko*, *Nevesinjsko*, *Dabarsko* and *Fatničko poljes*) and the underground karst rivers connected to them would be completely destroyed. Temporary rivers in the karst fields, caves and springs will be flooded or left with almost no water even before their biodiversity is properly studied.

Three endemic fish species (*Telestes dabar*,<sup>36</sup> *Telestes metohiensis*,<sup>37</sup> *Delminichthys ghetaldii*<sup>38</sup>) would probably be driven to extinction as all of them have already been impacted by Lower Horizons and other water extraction, pollution from the Gacko thermal power plant and wastewater, channelling of the rivers and/or droughts. At least one location of the endemic olm or 'human fish' (*Proteus anguinus*)<sup>39</sup> could also be impacted.<sup>40</sup>

**The Federation of Bosnia and Herzegovina:** The Upper Horizons would also involve closing or drying up several sinkholes, which may endanger the water flow to the iconic Buna, Bunica and Bregava rivers that are of crucial importance to towns in the Federation, like Blagaj and Stolac, as well as being home to protected species. According to the Dabar EIA, the Biograd sinkhole in the Nevesinjsko karst field, one of the biggest in Europe, will be among those impacted – 85 per cent of the water from the Zalomka river that sinks into Biograd and then feeds the Bunica will be diverted towards the Bileća reservoir.

Ponikva and other sinkholes that feed Bregava would also be left with almost no water after the channelling of the *Dabarsko* and *Fatničko poljes*. The same applies to sinkholes in *Nevesinjsko polje* that feed Buna if the uppermost reservoir (Zalomka, which would serve the Nevesinje hydropower plant) is built. As observed with Lower Horizons, in reality even the minimum planned to be left in some of the sinkholes according to the EIA will not be monitored or enforced. Most of the diverted water will not be returned to the Neretva basin as it will be used for the Dubrovnik hydropower plant.

The already seriously impacted *Hutovo blato* wetland, which is of international importance according to the Ramsar Convention, would receive even less water if Dabar is built. At only one metre above sea level, it is a unique wetland with almost no surface inflow. It is fed by 72 subterranean springs bringing water from karst fields at higher altitudes: *Popovo* (250 metres above sea level), *Dabarsko* (470 metres) and *Fatničko* (460 metres). The *poljes* have high precipitation but no stable river flow towards *Hutovo blato*, as in summer the rivers dry up on the surface and flow underground.

The Trebišnjica should feed *Hutovo blato*, but multiple sinkholes have already been completely blocked by the Lower Horizons complex. The other river that feeds *Hutovo blato* is Bregava and it will (to a great extent)

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<sup>35</sup> Projekt Banja Luka, [Studija uticaja projekta HE „Dabar“ na životnu sredinu – Konačna studija](#), July 2012, 40-43.

<sup>36</sup> Recently described as new species and should be EN or CR. Bogutskaya NG, Zupančić P, Bogut I, Naseka AM (2012) [Two new freshwater fish species of the genus \*Telestes\* \(Actinopterygii, Cyprinidae\) from karst poljes in Eastern Herzegovina and Dubrovnik littoral \(Bosnia and Herzegovina and Croatia\)](#). ZooKeys 180: 53–80. doi: 10.3897/zookeys.180.2127.

<sup>37</sup> IUCN Red List, [Telestes metohiensis \(Vulnerable\)](#), accessed 3 September 2023.

<sup>38</sup> IUCN Red List, [Delminichthys ghetaldii \(Vulnerable\)](#), accessed 3 September 2023.

<sup>39</sup> IUCN Red List, [Proteus anguinus \(Vulnerable\)](#), accessed 3 September 2023.

<sup>40</sup> The location is not being disclosed in order to protect the species from interference.

be dried up if Upper Horizons is built, as its most important sources of water are located in the *Dabarsko* and *Fatničko poljes*. In fact, part of its flow is already impacted by the construction of the *Dabarsko polje – Fatničko polje* and *Fatničko polje – Bileća reservoir* tunnels and the channel through *Fatničko polje*. This explains the extremely low levels of *Hutovo blato* in recent years.

**Croatia:** The project would decrease the flow of the river Neretva, whose delta in Croatia is already suffering from salination. As a Ramsar site and an important wetland and agricultural area, this in itself is a massive impact.

## Inadequate environmental impact assessment

An environmental impact assessment (EIA) was carried out in 2012 for the Dabar hydropower plant,<sup>41</sup> not for the whole complex, and was completed in July 2012.<sup>42</sup> An additional section on water<sup>43</sup> was provided later only to some stakeholders. No strategic environmental assessment (SEA) has been carried out for any plan or programme related to the complex.

The EIA lacks information on underground fauna and no substantial additional fieldwork was done to prepare the study. The only species the EIA tackles is the ‘gaovica’ fish, but it is unclear which of the three species it refers to (*Telestes dabar*, *Telestes metohiensis* or *Delminichthys ghetaldii*). Moreover, it wrongly assumes that the species can live in artificial reservoirs and will not be impacted by changes in the hydrological regime. Therefore, the study does not adequately describe the environmental baseline (‘aspects of the environment likely to be significantly affected’) as required by the EU EIA Directive.<sup>44</sup>

Downstream impacts on the *Hutovo blato* and Neretva Delta Ramsar sites are not discussed and nor are impacts on Emerald sites, Key Biodiversity Areas or other internationally recognised areas. Thus the EIA Directive’s requirement<sup>45</sup> for the study to contain a description of the likely significant effects of the proposed project on the environment has not been properly fulfilled.

Of the impacts the EIA does identify, it simplifies or plays down many of them. It mostly acknowledges the change of inflow towards the Ponikva sinkhole (that feeds Bregava) and Biograd sinkhole (that feeds Bunica). But it does not discuss the fact that the ecosystems depend on the natural fluctuation of water levels.

The authors claim that the Dabar hydropower plant project would only accumulate and use high waters during the wet season. Thus, according to the EIA, the project will only have ‘positive’ impacts on the water regime, since during summer it will be able to provide more water (from the reservoir) to the environment.

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<sup>41</sup> Projekt Banja Luka, [Studija uticaja projekta HE „Dabar“ na životnu sredinu – Konačna studija](#), July 2012.

<sup>42</sup> Ibid.

<sup>43</sup> Zavod za vodoprivredu d.d. Sarajevo, [Studija Uticaja HE Dabar - Segment Voda](#), undated.

<sup>44</sup> Under the Energy Community Treaty, at the time the project EIA was carried out, the relevant provision was Annex IV(3) of Directive 85/337/EEC amended by Directive 2003/35/EC.

<sup>45</sup> Annex IV(4) of Directive 85/337/EEC amended by Directive 2003/35/EC, which was the legally required standard under the Energy Community Treaty at the time of the Ulog EIA.



However, if the water regime is disturbed during the wet season, it will have major impacts on the water regime during the summer dry season, as has already happened with the Lower Horizons complex.

According to WWF,<sup>46</sup> monitoring at the Karaotok – Krupa River measuring station during the dry season and flooding in *Popovo polje* during the wet season has proven there is a direct relationship between the wet and dry season water levels. If there is more water in the winter, which consequently accumulates as ground water, there is more water in the summer since the springs are not dry.

By controlling the floods in winter/spring in the *poljes* and leaving some water in the rivers in summer, the EIA claims that the project would improve the habitats, as well as the possibilities for agricultural use of the territory. It completely disregards the impacts on the different natural wetlands (for example wet meadows and temporary lakes) of the *poljes* and on traditional agricultural practices. The impacts of closing smaller sinkholes and other karst features are not discussed at all.

Cumulative impacts with the Lower Horizons complex or the other Upper Horizons plants are not discussed. Thus the EIA Directive's requirement to examine the indirect, secondary, and cumulative effects of the project<sup>47</sup> has not been met.

Given that neither the baseline nor the impacts are properly examined in the EIA, it goes without saying that the mitigation measures foreseen are also inadequate or are wrongly claimed to be an inherent feature of the project.

For example, it is claimed that '*[w]ater from the Neretva basin that is collected at the Upper Horizons will return into the Neretva through the channel in the Popovo polje.*' This is not true, as most of the water will be diverted towards the Dubrovnik hydropower plant. Additionally, this is unacceptable as the measure circumvents the Derane depression where the only remaining natural wetland ecosystem at *Hutovo blato* can be found.

It also claims that '*[t]he Doljašnica and Ponikva sinkholes will be activated in order to increase the yield of springs in Hutovo blato and the Neretva Delta.*' By 'activated', the authors mean that water will be controlled, increasing the inflow in summer and decreasing it substantially in winter/spring. The same measure is proposed for the Biograd sinkhole – overall 85 per cent of its water will be diverted away from the sinkhole over the entire year. This measure depends on inter-entity agreements which are lacking. Additionally, it is almost impossible to monitor and enforce, so even the remaining 15 per cent will probably not be released to the sinkholes.

The study states that '*[t]he natural regime of the river Vrijeka, from the spring to the sinkhole Ponikva, should be protected from the changes that could endanger its fauna.*' But it does not say how. This also seems impossible to accomplish if a channel through the *Dabarsko polje* is built.

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<sup>46</sup> WWF - Mediterranean Programme, [Expert opinion](#), 2012.

<sup>47</sup> Annex IV(4) of Directive 85/337/EEC amended by Directive 2003/35/EC, which was the legally required standard under the Energy Community Treaty at the time of the Ulog EIA.

## Environmental permitting and legal challenges

### Dabar

In September 2012, the Ministry for the Environment and Tourism of the Federation of Bosnia and Herzegovina initiated legal proceedings against the approval of the environmental impact assessment for Dabar at the Banja Luka District Court. But irrespective of the then ongoing court procedures, on 3 December 2012, the Ministry for Spatial Planning, Construction and Ecology of Republika Srpska issued an environmental permit for the Dabar hydropower plant.<sup>48</sup>

In 2014, the Banja Luka District Court ruled in favour of the Republika Srpska authorities. In 2016, an appeal by the federal ministry resulted in the Republika Srpska Supreme Court upholding the lower court's decision.<sup>49</sup>

In 2017 and 2022 the environmental permit for Dabar was updated,<sup>50</sup> without any public announcements that this would occur. No new EIA process was carried out either, nor was one required by Republika Srpska's Law on Environmental Protection, despite the fact that the Energy Community Treaty's requirements had become more stringent since the first EIA was carried out.<sup>51</sup> The 2022 update was challenged in 2023 by the Aarhus Centar from Sarajevo, and the case is currently ongoing.

The Ministry for Spatial Planning, Construction and Ecology has issued a series of construction permits for the Dabar hydropower project.<sup>52</sup> It is not clear whether the channel across Dabarsko polje has a construction permit, though.

### Bileća

In November 2023, the responsible ministry published a notice inviting comments on the scoping document for the EIA for the Bileća hydropower plant.<sup>53</sup>

### Bern Convention complaint

In 2020, the Center for Environment, Aarhus Centar Sarajevo, Riverwatch, EuroNatur, ClientEarth and CEE Bankwatch Network submitted a complaint to the Bern Convention, which concentrated on the Ulog hydropower plant and other plants planned on the upper Neretva.

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<sup>48</sup> Republika Srpska Ministry for Spatial Planning, Construction and Ecology, [Decision no. 5.04-96-216/12 of 03.12.2012](#).

<sup>49</sup> Federal Ministry for Environment and Tourism, [Problematika Gornjih horizonata i izgradnje HE „Dabar“ u RS-u se rješava putem suda](#), 12 September 2012; Nezavisne Novine, [Vrhovni sud RS: Zakonita studija o uticaju HE "Dabar" na životnu sredinu](#), *Nezavisne Novine*, 18 April 2016. Republika Srpska Commission for Concessions, [Annual Report 2021](#), April 2022.

<sup>50</sup> Ministry for Spatial Planning, Construction and Ecology of Republika Srpska, [Ekološke dozvole](#), last updated 9 October 2023.

<sup>51</sup> Since 1 January 2019, Energy Community Contracting Parties have been obliged to apply [Directive 2011/92/EU as amended by Directive 2014/52/EU](#) when planning energy projects which may have significant environmental impacts.

<sup>52</sup> Republika Srpska Commission for Concessions, [Annual Report 2021](#); [State Aid Approval Decision](#), published May 2022, and Ministry for Spatial Planning, Construction and Ecology of Republika Srpska, [Građevinske dozvole izdate od maja 2013 godine do 30.6.2023 godine](#), last updated June 2023.

<sup>53</sup> Ministry of Spatial Planning, Construction and Ecology of Republika Srpska, [Obavještenje o prijemu zahtjeva za prethodnu procjenu uticaja na životnu sredinu za projekat izgradnje hidroelektrane „Bileća“ instalisane snage od 32 MW, na rijeci Trebišnjici, opština Bileća](#), 8 November 2023.

When the Bern Convention examined the case, it took into account all hydropower plants in the broader Neretva basin (including the Trebišnjica basin) in its case-file *2020/9 Possible negative impact of hydro-power plant development on the Neretva river*.<sup>54</sup> An on-the-spot appraisal mission carried out in 2022 resulted in a strong Recommendation<sup>55</sup> and the case was opened during the 42nd Standing Committee meeting. Point 13 of the Recommendation asks Bosnia and Herzegovina to implement a ban on development of further hydropower plants in the candidate Emerald Network site BA0000002 and all other candidate Emerald sites in the Neretva River basin.

These Emerald sites include *Popovo polje/Vjetrenica* (site code: BA0000012), *Fatničko polje* (BA0000023), *Dabarsko polje* (BA0000024), and *Nevesinjsko polje* (BA0000025).<sup>56</sup> Thus, works on the Dabar plant and preparation for the Bileća plant should have been stopped. However, the Bosnia and Herzegovina authorities have not yet implemented the recommendation.

## State aid

In May 2023, a civil society organisation (which chose to remain anonymous due to concerns about reprisals) submitted a complaint to the Energy Community Secretariat on the loan guarantee issued for the Dabar project. Given that the aid was notified to the Bosnia and Herzegovina State Aid Council only after it had been approved and the guarantee agreement signed, it appears to be automatically illegal.

Moreover, a number of substantial mistakes were made by the State Aid Council when assessing the aid. For example, it failed to properly assess the eligible costs, and failed to note that the works on the Dabar project were already underway, which usually means aid cannot be granted as it no longer incentivises the project to go ahead. The complaint is currently pending with the Energy Community Secretariat.

## Current project status

The construction logic of the Upper Horizons complex is hard to follow due to the large number of different elements and the fact that Dabar is supposedly the first plant to be completed, yet it is in the middle of the complex, so most of the elements downstream also have to be completed before it can operate.

The first section to be built was the 3.2-kilometre-long Dabarsko polje – Fatničko polje tunnel, which was opened in 1986.<sup>57</sup> Next was the 15.6-kilometre-long Fatničko polje – Bileća tunnel, contracted to the Energy Financing Team (EFT), which is downstream of the Dabar plant and would serve as the derivation tunnel for the Bileća project. The tunnelling was completed back in 2006. Even then it was claimed that it was being used to increase the water levels in Bileća reservoir;<sup>58</sup> however, only in 2021 did a project begin to fully line

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<sup>54</sup> Council of Europe, [Possible negative impact of hydro-power plant development on the Neretva river](#), Council of Europe, September 2020.

<sup>55</sup> Convention on the Conservation of European Wildlife and Natural Habitats Standing Committee, [Recommendation No. 217 \(2022\) of the Standing Committee, adopted on 2nd December 2022, on the possible negative impact of hydropower plant development on the Neretva River \(Bosnia and Herzegovina\)](#), 2 December 2022.

<sup>56</sup> Emerald Network Viewer: <https://emerald.eea.europa.eu/>

<sup>57</sup> Eptisa, *Izrada modela za hidrološka predviđanja, prognoziranje, donošenje odluka, priprema plana, smjernica, program obuke za optimalno upravljanje višenamjenskim akumulacijama u slivovima Rijeka Neretve i Trebišnjice. Plan upravljanja za akumulacije i hidroelektrane: Upravljanje sustavima i uvjetima velikih voda*, November 2014, 27.

<sup>58</sup> Vesna Duka, [Tunel Fatničko polje pušten u rad](#), *Nezavisne Novine*, 11 December 2006.

it with concrete. The tunnel was 20 per cent lined with concrete from the start, but from public statements by the *Hidroelektrane na Trebišnjici* Director, it appears that it was losing significant amounts of water from the unlined sections.<sup>59</sup>

A large channel through *Fatničko polje* has also been built<sup>60</sup> by Integral Inženjering.



*The channel through Fatničko polje. Photo: CEE Bankwatch Network, June 2023.*

Although *Dabarsko polje* appeared to be in very good condition when we visited in June 2023 (unlike *Fatničko polje*, which had recently been flooded for an extended period due to the closure of the tunnel downstream), people in both fields are claiming damages from *Hidroelektrane na Trebišnjici* for the loss of arable land as a result of the projects.<sup>61</sup> On *Dabarsko polje*, subsidence is taking place as the tunnel allows soil to be washed downstream.

## Dabar

The tunnel from *Nevesinjsko polje* to the Dabar plant has mostly been completed, with the works officially starting on 1 September 2016. As with the *Fatničko polje* channel, the project is being carried out by Integral Inženjering.<sup>62</sup> In September 2022, a worker from Integral died and two were injured during a collapse of the

<sup>59</sup> Vesna Duka, '[Betoniranje tunela Fatničko polje – Bilečko jezero donosi nove kilovate struje](#)', *Nezavisne Novine*, 13 September 2021.

<sup>60</sup> Integral Inženjering, '[Završena izgradnja kanala kroz Fatničko polje](#)', 21 September 2018.

<sup>61</sup> Andrijana Pisarević, '[Uništene njive: Vlasnici parcela u Dabarskom i Fatničkom polju traže odštetu od HET-a](#)', *e-trafika*, 9 August 2023.

<sup>62</sup> Natalija Jovanović, '[Balkanski poslovi sankcionisanog Slobodana Stankovića](#)', *Radio Slobodna Evropa*, 6 October 2022.

tunnel.<sup>63</sup> By February 2023, 11.8 kilometres of tunnel had been excavated, with only 300 metres left to go,<sup>64</sup> and at the beginning of November 2023 it was reported that 140 metres was left to go.<sup>65</sup>



*The entrance to the tunnel at Nevesinjsko polje in the Zalomka river valley. Photo: CEE Bankwatch Network, June 2023.*

The start of works on the other sections of the Dabar project – the ones financed by China Eximbank – were announced in June 2023,<sup>66</sup> and as seen on a field visit in late September 2023, Chinese contractor Gezhouba was starting to build the high-pressure pipelines to the planned powerhouse and preparing the area of the powerhouse.

Construction of the Dabarsko polje channel has not started yet. It is crucial to stop it as the meadows on Dabarsko polje are still of very high quality.

## Bileća

The Bileća hydropower plant is far behind the Dabar plant in its preparations, as it does not have either financing or permits. However, given its smaller size and the fact that some of the needed infrastructure has already been built (the *Fatničko polje* – Bileća tunnel, the *Fatničko polje* channel and the *Dabarsko polje* –

<sup>63</sup> Crna Hronika, [Pogledajte mjesto nesreće gdje je poginuo radnik iz Živinica](#), *Crna Hronika*, 18 September 2022.

<sup>64</sup> Integral Inženjering, [Dovodni tunel za HE Dabar: Izvedeni radovi u 2022. i planirani radovi u 2023. godini](#), *Integral Inženjering*, 7 February 2023.

<sup>65</sup> Herceg Televizija, [Reportaža: Kako protiču radovi na izgradnji HE Dabar?](#), *Herceg Televizija*, 1 November 2023.

<sup>66</sup> Balkan Green Energy News, [Works launched on 160 MW hydropower plant Dabar in Bileća](#), *Balkan Green Energy News*, 26 June 2023.

*Fatničko polje* tunnel), it may be realised much more quickly than Dabar. See above for more details on the concession and start of the EIA process.

## Nevesinje

The Nevesinje hydropower plant is not yet subject to a concession and has no permits and no financing. Expropriation has also not started, according to local people we spoke to during a June 2023 visit.

## Potential ways forward

The Upper Horizons complex needs to be halted, as mitigating impacts is almost impossible for such a complex hydropower scheme in karst terrain.

In addition, inter-state and inter-entity agreements on water use are needed, as well as new protected areas with appropriate management regimes, including the ones proposed until 2025 in the Republika Srpska Spatial Plan, plus proper protection of the lower Neretva, and Buna, Bunica and Bregava. Republika Srpska's post-2025 spatial plan also needs to resolve the conflicts between the planned protected areas and the planned hydropower plants by ensuring that the protected areas will not be damaged.

The existing impacts from the Lower Horizons complex also need to be mitigated. In 2015, WWF Adria produced a publication to this end, entitled *Action plan: Restoration of the wetland ecosystem Hutovo Blato*.<sup>67</sup> It proved that the wetland is in a very poor condition and proposes the energy companies to return (via a natural sinkhole) 5 cubic metres per second (m<sup>3</sup>/s) of water depleted during the summer.

The measures for the five years of the action plan would cost a total of EUR 2.5 million and should be paid by the energy utilities which have caused the damage – EUR 1.3 million from EP HZHB and EUR 1.2 million from HEP and ERS. To the best of our knowledge, the energy companies have not carried out or financed any of these measures so far.



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<sup>67</sup> WWF - Mediterranean Programme, [Action plan: Restoration of the wetland ecosystem Hutovo Blato](#), WWF, 2015.