EUROPEAN BANK FOR RECONSTRUCTION AND DEVELOPMENT

PROJECT COMPLAINT MECHANISM

COMPLIANCE REVIEW REPORT

COMPLAINT: ŠOŠTANJ THERMAL POWER PROJECT

REQUEST NUMBER: 2012/03

EXECUTIVE SUMMARY

The PCM received a joint Complaint from three civil society organisations, Focus Association for Sustainable Development, Environmental Legal Service and CEE Bankwatch Network, requesting a Compliance Review of the Sostanj Thermal Power Project. The Complaint was registered according to the PCM Rules of Procedure on 24 January 2012 and on 22 January 2013 the Eligibility Assessment Report (EAR) was publicly released, declaring the Complaint eligible and warranting a Compliance Review. The EAR also noted the appointment of PCM Expert Dr Owen McIntyre as the Compliance Review Expert.

The Complainants allege that the Bank has failed to comply with the EBRD's 2008 Environmental and Social Policy (ESP) on two grounds. First of all, the Complaint contends that EBRD failed to ensure that the Client properly applied the criteria established under Article 33 of the EU Carbon Capture and Storage (CCS) Directive, as it argues is required under Performance Requirement 3.5 of the ESP, when it concluded that the Project was CCS ready. The Compliance Review Expert has determined that the assessment of CCS readiness did in fact meet the requirements of Article 33 and was, therefore, adequate for the purposes of the ESP.

Secondly, the Complaint alleges that EBRD failed to ensure compliance with the relevant EU climate goals, thereby breaching the provisions of the ESP. The Compliance Review Expert has determined that these goals do not amount to a "relevant EU environmental requirement" for the purposes of PR 3.5 and, therefore, cannot comprise a requirement with which the Bank might be required to comply under the ESP. On this basis, the Compliance Review Expert has declined to examine this ground of complaint.

Therefore, the Compliance Review Expert has made a finding of compliance in respect of each of the grounds set out in the present Complaint.

I. INTRODUCTION

Factual Background

1. Termoelektrarna Šoštanj ("TES"), a coal-fired power plant in northeast Slovenia currently generating one-third of Slovenia's electricity, is undergoing a large-scale modernization programme with loans from the EBRD, the European Investment Bank (EIB) and several commercial banks. The Project replaces 5 low-efficiency, high-carbon units that are reaching the end of their operational life with a new, higher-efficiency unit (Unit 6)[1]. TES will continue to burn lignite coal from the nearby Velenje coal mine. Both TES and Velenje are owned by the Holding Slovenske Elektrarne d.o.o. (HSE), the biggest producer and wholesaler of electricity in Slovenia.

2. The stated goals of the Project are to increase efficiency, lower CO2 emissions, and bring the facility into compliance with international Best Available Techniques (BAT) and the environmental requirements of the EU's Industrial Emissions Directive (IED). While the Project does not include funding for carbon capture and storage (CCS) technology, a tool for reducing emissions which is not yet commercially available, TES claims to be designed for future CCS installation, and both EBRD and TES consultants have found the plant to be "CCS-ready."

3. The EIB loan was signed in September 2007 and amended in April 2010, and the EBRD loan was approved in July 2010 and signed in January 2011. A Notice to Proceed was issued in December 2009, and the Project is now over 70% completed. EBRD has designated the Project as Category A under the ESP.

4. On 17 January 2012, three civil society organizations, Focus Association for Sustainable Development, Environmental Legal Service and CEE Bankwatch Network, requested a Compliance Review of the Sostanj Thermal Power Project pursuant to EBRD's Project Complaint Mechanism (PCM) process. The Complaint was registered on 24 January 2012. The Bank filed its Response to the Complaint with the PCM Officer on 14 February 2012.

5. On 22 January 2013 the PCM's Eligibility Assessment Report (EAR) was published which found that the Complaint satisfies the criteria for a Compliance Review as set out under the PCM Rules of Procedure. The EAR contained detailed Terms of Reference for the conduct of this Compliance Review and noted that the PCM Officer appointed PCM Expert Dr Owen McIntyre as the Compliance Review Expert.

Summary of the Positions of the Relevant Parties

<u>Complainants' Position</u>

[1] *Non-Technical Summary (NTS) of Modernisation and Reconstruction of TES Power Plant*, at 2-4.

CCS Directive

6. The Complainants argue that EBRD failed to properly apply the criteria of Article 33 of the CCS Directive when it concluded that the TEC Project was CCS ready, and that such a failure violated EU environmental requirements and, consequently, EBRD policy. Article 33 applies to combustion plants with an output of at least 300 MW "for which the original construction licence or … the original operating licence" was granted after the signing of the Directive. The European Commission's Directorate-General for Climate Action interprets this to mean the CCS-readiness provisions of Article 33 apply to such combustion projects as of 25 June 2009 without any further action by EU countries[2]. The Complaint argues that because TES's "original" construction license or permit was issued on 16 March 2011, and the Project plans contemplate an electrical output of 600 MW, the Project clearly falls under the provisions of Article 33[3].

7. The Complainants concede that there are no clear standards governing the type or level of assessment required by Article 33, in terms of how to adequately evaluate the suitability of storage or the technical and economic feasibility of CO2 transport and of retrofitting a plant with CCS technology. Nonetheless, the Complainants argue that Article 33 can and should be interpreted under the "effectiveness doctrine" to require a meaningful assessment that furthers the Directive's ultimate goal of promoting CCS technology and usage. In other words, the assessment should not be *pro forma*, but should evaluate whether it is truly feasible for the plant to employ CCS technology when it becomes available, or whether its use would face obstacles in terms of storage, transportation, technology, financial feasibility or on-site space, that would render it unduly costly, burdensome or otherwise impracticable[4]. The Complainants also state that, while EBRD does not have detailed policies governing the implementation of the CCS Directive, they understand from the Bank that it adheres to the IEA's definition of CCS readiness, meaning the discovery and elimination of factors that could prevent installation and operation of a CO2 capture system[5].

8. In addition to being directly required by Article 33 of the CCS Directive, the Complainants argue that a meaningful Carbon Capture and Storage Readiness (CCSR) assessment, consistent with the provisions of Article 33, is required under EBRD's policies and commitments. The Complainants point to EBRD's participation

[2] *Complaint*, at 3 (citing Article 33 of CCS Directive and DG Climate Action position); *see also* http://www.ucl.ac.uk/cclp/pdf/s4_mdoppelhammer.pdf.
[3] *Complaint*, at 3.
[4] *Ibid.*
[5] *Ibid.* at 5. According to the IEA, CCS readiness means
'Developers of capture-ready plants should take responsibility for ensuring that all known factors in their control that would prevent installation and operation of CO2 capture have been eliminated. This might include: (i) A study of options for CO2 capture retrofit and potential pre-investments, (ii) Inclusion of sufficient space and access for the additional facilities that would be required, (iii) Identification of reasonable route(s) to storage of CO2.'
See http://www.iea.org/papers/2007/CO2_capture_ready_plants.pdf at 2-3.

in the European Principles for the Environment, which commits signatory financing institutions to adhere to environmental principles and standards identified in the EU Treaties and embodied in the EU "secondary environmental legislation"—in this case, the EU CCS Directive[6].

9. The Complaint also argues that the Bank failed to comply with Performance Requirement (PR) 3.5 of the ESP, which requires that Bank-funded projects comply with relevant existing international environmental requirements – here the CCS-readiness provisions of the CCS Directive, effective as of 25 June 2009[7].

10. The Complainants also cite the Banks's stated environmental commitments and responsibility under the ESP for reviewing clients' assessments and helping avoid or mitigate adverse impacts 'consistent with the PRs'[8]. The Complaint notes the Bank's stated commitment to environmentally sound and sustainable development in its founding document[9].

11. The Complaint alleges that EBRD violated these commitments by inadequately assessing the CCS readiness of the Project and making conclusions without sufficiently analysing, or in some cases addressing, the criteria in Article 33. Without meaningful analysis or methodology, the Complainants argue, EBRD's assessment cannot be said to comply with international environmental requirements, such as an Article 33 CCSR analysis. The Complaint contends that EBRD has abrogated its responsibility to ensure compliance with relevant environmental standards under the 2008 ESP.

12. The Complaint references two studies conducted and submitted by the Client to EBRD on CCS feasibility of the TES Project: *Possibilities of Capture and Storage of CO2 from Unit 6 of Sostanj Thermal Power Plant* (Milan Vidmar Electric Power Research Institute), May 2010 and September 2010[10]. It claims these studies lack (1) project-specific analysis concerning economic feasibility of capture, storage or transport; (2) technical feasibility of transport, in light of local geographical conditions, particularly for building pipelines; (3) suitability of local storage sites beyond information that was already available, although it was unclear from the Complaint why this was insufficient[11]. The Complainants do not mention the several other studies that, according to the Client and Bank, the Client has commissioned[12].

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[6] *Complaint*, at 5

[7] EBRD, *Environmental and Social Policy* (May 2008). Performance Requirement (PR) 3.5 states that 'projects will be designed to comply with relevant EU environmental requirements as well as with applicable national law, and will be operated in accordance with these laws and requirements.'

[8] *Complaint*, at 5 (citing ESP at 2-3, PR 3).

[9] *Ibid.* (citing Article 2.1(vii) of Agreement Establishing EBRD).

[10] *Ibid.* at 4, note 11.

[11] *Ibid.* at 4.

[12] *Client Response* at 4; *Bank Response* at 4. Both the Bank and Client refer to three additional studies; but the Bank also cites an additional study: *Possibilities for geological storage of CO2 in Slovenia and out of Slovenia*,

Climate Targets

13. In 2009 the European Council (EC), through a Presidency Conclusion, announced the need to establish an EU objective of achieving an 85-90 per cent reduction in CO_2 emissions in developed countries by 2050 as compared with 1990 levels. The Complaint argues that this announcement from the EU's highest policy-setting body represents an "EU environmental requirement" under the EBRD's ESP[13].

14. ESP Performance Requirement 3.5 states that 'projects will be designed to comply with relevant EU environmental requirements' and the Complainants believe the EBRD was required to 'take into account' this policy directive when assessing the Project and its consistency with international requirements. They argue that EBRD failed to do so by assessing the Project for CCS readiness without a meaningful analysis of its compatibility with the EU 2050 climate targets[14].

15. Specifically, an 80-95 per cent reduction in emissions from 1990 levels would mean that Slovenia could only emit 1 to 4 million tons of CO_2 annually from all sectors, including transportation and energy. TES currently emits nearly 5 million tons of CO_2; in 1990 it emitted nearly 4 million tons. While EBRD has claimed that the Project's increased efficiency will ultimately allow TES to reduce its carbon emissions by roughly 1.2 million tons, the Complainants note that this still amounts to TES emitting either much more than or close to Slovenia's entire permitted carbon emissions for all sectors in 2050[15]. Consequently, the Complainants argue, TES's operation, enabled in part by EBRD's funding, essentially makes it impossible for Slovenia to meet the 2050 climate goals established by the EU.

16. The Complaint does not explain whether, if TES were to begin using CCS technology at a certain point, the Project could be compatible with the 2050 climate goals. It implies that TES's operation would effectively prevent Slovenia from meeting its 2050 climate goals even if it began employing CCS technology when commercially available, but this is not clear from the Complaint[16]. The Complaint maintains that, even if EBRD's approval of the Project is based on its assumption that the Project *will* use CCS at some point in the future, such an assumption is sufficiently speculative and vague to make it inconsistent with "relevant EU requirements"[17].

<u>Bank's Position</u>

Geological Survey of Slovenia, University of Ljubjana- Faculty of Natural Sciences and Engineering Department of Geo-technology and Mining Engineering, HGEM, Nafta-Geoterm Lendava, ERICo. *Ibid.* See further, *infra*.

[13] *Complaint*, at 6.

[14] *Ibid.*

[15] *Ibid*. Presumably this depends on whether emissions reductions targets for 2050 are 80 or 95 percent, or somewhere in between. The Complaint also notes it is unclear whether the starting points for this reduction are 1990 levels or current levels, which makes a difference of millions of tons.

[16] *Ibid.* at 6-7.

[17] *Ibid.*

CCS Directive

17. The Bank claims that Article 33 did not apply at the time of EBRD's approval in July, 2010, as the deadline for transposing the Directive into national law had not yet run and Slovenia had not yet passed legislation adopting the Directive[18]. Nonetheless, the Bank claims its assessment was consistent with the CCS-readiness criteria of Article 33 and in accordance with PR 3.5 of the ESP[19]. The Bank does not specifically address the Claimants' contention that Article 33 was directly applicable as of the signing of the Directive.

18. As the CCS Directive is a relatively new measure, the Bank notes that there is no official, EU-endorsed guidance on how to conduct a CCS assessment for existing power plants. Because CCS technology is not commercially available, it claims it is impossible to comprehensively assess the economic impacts for an existing power plant[20]. Nonetheless, the Bank required TES to conduct its own CCS-readiness assessment as well as hiring an independent consultant to do so as part of the Bank's due diligence. According to the Bank, both concluded that Unit 6 has space for and would be able to accommodate future installation of Carbon Capture and Storage systems, once the technology becomes commercially available and is required by law[21]. The Bank claims TES will continue to update its CCS-readiness assessment, and that updates will need to take into account changes in CCS technology, laws and regulations, and the price of carbon certificates, all of which affect the economic and technical viability of CCS[22]. It notes that TES has already undertaken a number of studies to this effect, though it does not discuss the conclusions of those studies[23].

19. The Bank does not specifically address the criteria in Article 33 related to (1) the technical or economic feasibility of transporting the compressed CO2, (2) the suitability of potential storage options, or (3) the economic feasibility of retrofitting the plant with CCS technology. Although the Bank notes the TES studies referenced above, it does not address whether the studies assessed the specific criteria in Article 33[24].

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[18] *Bank Response*, at 3 (pointing out that Slovenia did not transpose the Directive until January 2012).
[19] *Ibid*.
[20] *Ibid.* at 4.
[21] *Bank response*, at 4.
[22] *Ibid.*
[23] The studies to which the Bank refers are: (1) *Possibilities of capture and storage of CO2 from Unit 6 of Sostanj Thermal Power Plant*, Milan Vidmar Electric Power Research Institute, May 2010; (2) *Capture ready – possibilities of capturing carbon from the coal combustion plants in connection with the project solutions at Unit 6 of TES*, Elek Svetovanje, May 2011; (3) *Implementation of the ETS and CSS legislation into Slovenian legal order*, Milan Vidmar Electric Power Research Institute 2011; (4) *Development of CO2 capture technologies*, Elek Svetovanje, October 2010; (5) *Possibilities for geological storage of CO2 in Slovenian and out of Slovenia*, Geological Survey of Slovenia, University of Ljubjana- Faculty of Natural Sciences and Engineering Department of Geo-technology and Mining Engineering, HGEM, Nafta-Geoterm Lendava, ERICo. *Ibid*.
[24] *Ibid*.

20. The Final Due Diligence Report submitted by the Bank's consultant in December 2009 stated that the plant was 'prepared' for installation of CCS technology should it become legally required. However, the Report also stated that there were virtually no references to CCS in the documents reviewed and that plans for Unit 6 include limited extra space, so the feasibility of using CCS technology would need to be studied at more length[25].

EU Climate Targets

21. The Bank claims that the TES Project enhances the likelihood of Slovenia achieving its long-term emissions reduction targets by significantly reducing CO_2 emissions. The Project will lead, the Bank claims, to a carbon emission reduction of around 1.2 million tons CO_2 per year, thereby contributing significantly towards achieving Slovenia's carbon emission reduction targets. The Bank did not seem to factor the use of CCS technology into this calculation. Nor was it clear to which specific targets the Bank was referring. Nonetheless, the Bank claims Unit 6 represents the lowest possible carbon output among the feasible alternatives, particularly given that TES currently supplies roughly one-third of the electricity produced in Slovenia[26].

22. The Bank argues that Slovenia's energy policy, and the question of whether it meets the EU 2050 climate targets, is a matter for the Slovenian government. It notes that EBRD finances projects only after they are approved by the competent national authority, and that EBRD develops its energy strategy with the approval of each host country[27].

Client's Position

CCS Directive

23. The Client rejects the argument that the Project does not comply with the CCS Directive, arguing that it has been diligent in ensuring that the Project meets whatever standards were set by the Directive, including the commissioning of several studies to assess the CCS readiness of the Project[28]. It claims the goal of these studies was to assess the Project according to the criteria in Article 33[29].

[25] Poyry Energy Ltd, *Final Due Diligence Report* (December 2009), Section 3.2.5, at 26.
[26] *Bank Response* at 5.
[27] *Ibid.*
[28] The studies to which the Client refers are: (1) *Possibilities of capture and storage of CO2 from Unit 6 of Sostanj Thermal Power Plant*, Milan Vidmar Electric Power Research Institute, May and September 2010; (2) *Capture ready – possibilities of capturing carbon from the coal combustion plants in connection with the project solutions at Unit 6 of TES*, Elek Svetovanje, 2011; (3) *Implementation of the ETS and CSS legislation into Slovenian legal order*, Milan Vidmar Electric Power Research Institute 2011; and (4) *Development of CO2 capture technologies*, Elek Svetovanje, October 2010. See *Client Response*, at 4. It does not mention the study *Possibilities for geological storage of CO2 in Slovenian and out of Slovenia*, which the Bank claims the Client undertook in addition to the above studies. See *Bank Response* at 4.
[29] *Client Response* at 4.

24. The Client echoes the uncertainty noted by the Complainants and EBRD regarding the exact requirements of Article 33 of the CCS Directive, stating the technology is still in the developmental stage and European standards have yet to be set in interpreting the contours of the Directive. It also notes some uncertainty regarding the deadline for transposing the CCS Directive into Slovenian law, and suggests the Directive has not been fully transposed into Slovenian law even with the passage of the March 2012 legislation. It does not address the Complainants' claim that Article 33 was directly applicable as of June 2009[30].

25. The Client emphasises that the Project has repeatedly been found to comply with national and EU (as part of national) law, noting the rigorous due diligence process undertaken by the EBRD, and prior to that, by the government of Slovenia in permitting the TES Project. It explains that Austria, too, initially had a trans-boundary concern regarding the Project that was satisfactorily resolved[31].

26. Regarding the Project's CO_2 emissions, the Client claims the replacement Unit 6 will emit 3.1 million tons annually through 2030; by 2050 it states its CO_2 emissions are expected to fall under 2 million tons based on an expected decrease in the plant's energy production[32]. The Client does not explain the basis of these expectations, or the assumptions or factors upon which they rely[33].

Climate goals

27. The Client claims that the Complaint improperly credits EBRD with responsibility for ensuring Slovenia meets its 2050 Climate goals, and argues any concern about Slovenia's ability to meet its 2050 targets should be raised as a matter of public policy with the Republic of Slovenia[34].

Steps Taken to Conduct the Compliance Review

28. In addition to conducting a thorough review of all Project documentation and background studies, including internal and external Bank correspondence, the Compliance Review Expert held meetings in London on 6 June 2013 with members of the Bank's Project Team and relevant staff from the EBRD Environment and Sustainability Department (ESD).

[30] *Ibid.* at 3-4.
[31] *Ibid.* at 2-3.
[32] *Client Response* at 1.
[33] *Ibid*.
[34] *Ibid.* at 3.

II. EBRD POLICY OBLIGATIONS

Assessment of CCS Readiness

Relevance of Article 33(1) of the CCS Directive

29. The Complainants' first ground of complaint alleges that EBRD erroneously concluded that 'the project in question is "CCS Ready" and that the assessment submitted by the operator fulfils the criteria set up by Directive 2009/31/EC, Article 33.1', and was thus in breach of PR 3.5 of the 2008 ESP requiring that 'projects will be designed to comply with relevant EU environmental requirements as well as with applicable national law, and will be operated in accordance with these laws and requirements'[35].

30. Before proceeding to examine the precise requirements of Article 33(1) of the CCS Directive, it is necessary to establish that these amount to 'relevant environmental requirements' within the meaning of PR 3.5. In this regard, it is important to note that Paragraph 3 of the ESP states generally that '[t]he Bank is committed to promoting European Union (EU) environmental standards as well as the European Principles for the Environment, to which it is a signatory, which is reflected in the PRs'. Paragraph 3 further provides that the European Principles for the Environment (EPE) 'are defined as the guiding environmental principles in the EC Treaty *and the practices and standards incorporated in EU secondary legislation*'[36]. It further confirms that EPE commitments are reflected in PR 3. Indeed, PR 3.2 further explains that: 'As a signatory to the European Principles for the Environment, the EBRD is committed to: … requiring compliance with relevant EU environmental standards, in particular those related to industrial production … *where these can be applied at the project level* (hereafter: "EU environmental requirements")'[37].

31. In addition, the PCM has consistently found that an analogous provision in respect of biodiversity conservation and sustainable management of living natural resources contained in PR 6.2 of the ESP ensures that the "appropriate assessment" of potential impacts upon the ecological integrity of protected areas stipulated under Article 6(3) of the 1992 Habitats Directive may be considered a relevant EU requirement, which informs the content of the specific environmental standards and safeguards set out under PR 6[38]. However, in so concluding the PCM has also made it perfectly clear that 'the role of the Bank in approving a Project for EBRD financing ought not to be

[35] *Complaint*, at 1.
[36] Emphasis added.
[37] Emphasis added.
[38] See PCM, *Compliance Review Report: Boskov Most Hydropower Project* (Request No. 2011/05), para. 18; PCM, *Compliance Review Report: Ombla Hydropower Project* (Request No. 2011/06), para. 27. Indeed, the relevance of Article 6(3) of the 1992 Habitats Directive for the interpretation of Bank environmental safeguards can be traced back to Paragraphs 6 and 21 of the EBRD's 2003 Environmental Policy, see PCM, *Compliance Review Report: D1 Motorway, Phase 1, Slovak Republic* (Request No. 2010/01), paras. 8-10 and 12.

confused with the role of a "competent national authority" in permitting a Project in accordance with the requirements of national law and, where applicable, EU law[39].

32. As Article 33(1) of the CCS Directive in essence involves an assessment of the readiness of certain new thermal power stations for the retrofitting of carbon capture and sequestration technology, it can easily be concluded that it amounts to a requirement 'related to industrial production' which 'can be applied at the project level' as stipulated under PR 3.2. Any other understanding of the relevance of Article 33(1) of the CCS Directive would render meaningless PR 3.2 and PR 3.5 of the 2008 ESP.

Entry into Force / Applicability of Article 33(1) of the CCS Directive

33. It is quite clear from the wording of Article 33(1) of the CCS Directive that that provision is not subject to the deadline for general transposition of the Directive, *i.e.* 25 June 2011,[40] but instead entered into force on 25 June 2009. That provision itself stipulates that the requirement for operators to assess whether the relevant CCS readiness conditions are satisfied applies to plants for which the original construction or operating licence 'is granted after the entry into force of Directive 2009/31/EC'. Article 40 of the 2009 CCS Directive provides that it 'shall enter into force on the 20th day following its publication in the *Official Journal of European Union*. The Directive was officially published on 5th June 2009[41]. Therefore, quite unusually for an imperative EU Directive provision, the requirements of Article 33(1) became applicable almost immediately, irrespective of the two-year transposition period provided under Article 39(1), within which Member States are required to 'bring into force the laws, regulations and administrative provisions necessary to comply with this Directive by 25 June 2011'. This unusual situation might be explained by the fact that Article 33 of the CCS Directive simply amends an existing Directive, which was already in force[42]. In support of this conclusion regarding the date of applicability of Article 33(1), Recital 47 of the CCS Directive further suggests the urgency of bringing into force the requirement for an assessment of CCS readiness. It explains that '[t]he transition to low-carbon power generation requires that, in the case of fossil fuel power generation, new investments be made in such a way as to facilitate substantial reductions in emissions', and states that

> 'To this end, Directive 2001/80/EC … should be amended to require that *all combustion plant of a specified capacity* … have suitable space on the installation site for the equipment necessary to capture and compress CO_2 if

[39] *Ibid.*, at para. 19 and para. 28 respectively.
[40] As specified under Article 39(1).
[41] OJ L 140/114, 5 June 2009. Therefore, Article 33 became applicable from 25 June 2009.
[42] Directive 2001/80/EC on the limitation of emissions of certain pollutants into the air from large combustion plants, OJ L309/1, 27 November 2001, hereafter the Large Combustion Plant (LCP) Directive. In 2010, the LCP Directive was incorporated into the new consolidated Directive 2010/75/EU on industrial emissions (integrated pollution prevention and control), OJ L334/17, 17 December 2010, hereafter the Industrial Emissions Directive (IED). Article 33 of the CCS Directive can now be read as Article 36 of the IED Directive.

suitable storage sites are available, and if CO_2 transport and retrofitting for CO_2 capture are technically and economically feasible.'[43]

Therefore, Article 33 merely requires an assessment of CCS readiness as an additional element of the pre-existing permitting process for certain power generation plant, a requirement which would not demand the establishment of new institutional arrangements on the part of Member States, and thus would not justify a two-year transposition period.

EBRD Responsibility / Oversight

34. There can be little doubt about the Bank's responsibility under the 2008 ESP for ensuring that the Client's assessment of CCS readiness should have met the requirements of Article 33(1) of the 2009 CCS Directive. In the context of the Bank's obligation 'to ensure through its environmental and social appraisal and monitoring processes that the projects it finances: are socially and environmentally sustainable … and are designed and operated in compliance with applicable regulatory requirements and good international practice', Paragraph 3 of the ESP proceeds to explain that '[t]he Bank expects clients to assess and manage the environmental and social issues associated with their projects so that projects meet the PRs. The Bank's role is: [*inter alia*] (i) *to review the client's assessment …*'[44]. The PCM has already made an unequivocal determination in this regard in its Eligibility Assessment Report to the current Complaint[45].

Requirements under Article 33(1) of the CCS Directive

35. Article 33 of the 2009 CCS Directive provides that the following text shall be inserted into Directive 2001/80 EC to comprise a new Article 9a of that Directive[46]:

    1. Member States shall ensure that operators of all combustion plants with a rated electrical output of 300 megawatts or more for which the original construction licence or, in the absence of such a procedure, the original operating licence is granted after the entry into force of Directive 2009/31/EC of the European Parliament and of the Council of 23 April 2009 on the geological storage of carbon dioxide, have assessed whether the following conditions are met:
        - suitable storage sites are available,
        - transport facilities are technically and economically feasible,
        - it is technically and economically feasible to retrofit for CO2 capture.
    2. If the conditions in paragraph 1 are met, the competent authority shall ensure that suitable space on the installation site for the equipment necessary to capture and compress CO_2 is set aside. The competent authority shall determine whether the conditions are met on the basis of the assessment

[43] Recital 47, emphasis added.
[44] ESP, para. 3, emphasis added.
[45] *EAR Šoštanj Thermal Power Project*, at 18, para. 55.
[46] Now Article 36 of the IED Directive, see *supra*, n. 42.

referred to in paragraph 1 and other available information, particularly concerning the protection of the environment and human health.

36. Therefore, Article 33(1) would appear to require, in the first instance, that an assessment be conducted of thermal power plant projects, such as the Šoštanj Project, in order to establish the overall feasibility of CO_2 capture, transport and storage. Where such feasibility is established, it must then be established under Article 33(2) that sufficient space is set aside at the plant site for the capture and compression of CO_2 from the plant. Thus, Article 33 would appear to require an assessment in respect of a total of four conditions in two consecutive phases: the three conditions set out under Article 33(1) in the first phase; and, where these conditions are satisfied, the single condition set out under Article 33(2) in the second phase.

Availability of a Storage Site

37. First of all, regarding the availability of a suitable storage site, it is clear that the Client ought, as a minimum, to have carried out its assessment in accordance with the requirements of Annex I of the CCS Directive, which establishes "Criteria for the Characterisation and Assessment of the Potential Storage Complex and Surrounding Area". Annex I usefully stipulates that such characterisation and assessment 'shall be carried out in three steps according to best practices at the time of the assessment and to the … criteria' set down therein. The three steps elaborated comprise:

    Step 1 – Data collection;

    Step 2 – Building the three-dimensional static geological earth model; and

    Step 3 – Characterisation of the storage dynamic behaviour, sensitivity characterisation, risk assessment.

    Further official guidance exists in relation to the assessment of the availability of a suitable storage site in the form of the European Commission's Guidance Document 2[47], which provides considerable technical detail on the methodology required for each of the assessment steps outlined above. In addition, detailed guidance on the practice of assessing CCS readiness has been produced by the national authorities of EU Member States[48] and by industry groups and fora dedicated to the development and promotion of CCS technology[49]. In practical terms, the UK guidance cited above suggests that demonstration of a suitable storage area should involve:

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[47] European Commission, *Implementation of Directive 2009/31EC on the Geological Storage of Carbon Dioxide: Guidance Document 2 – Characterisation of the Storage Complex, CO_2 Stream Composition, Monitoring and Corrective Measures* (2011), available at: http://ec.europa.eu/clima/policies/lowcarbon/ccs/implementation/docs/gd2_en.pdf

[48] Department of Energy and Climate Change (UK), *Carbon Capture Readiness (CCR): A Guidance Note for Section 36 Electricity Act 1989 Consent Applications* (2009), available at: https://whitehall-admin.production.alphagov.co.uk/government/uploads/system/uploads/attachment_data/file/43609/Carbon_capture_readiness_-_guidance.pdf

[49] Global Carbon Capture and Storage Institute / ICF International, *CCS Ready Policy: Considerations and Recommended Practices for Policymakers* (2010), available at: http://www.cslforum.org/publications/documents/CCS_Ready_Policy_Considerations.pdf

- identification of a possible storage area, including delineating the geographical extent of that area, and identification within that area of at least two "viable" or "realistic" geological formations;
- reliance on authoritative data sources for identification of the suitability of these areas and geological formations; and
- a short summary including an estimate of the total volume of CO_2 likely to be captured and stored by the power station and an estimate of the CO_2 storage potential of the area(s) identified by the applicant[50].

Economic Feasibility of CO_2 Capture, Transport and Storage

38. Regarding the assessment of the technical and economic feasibility of CO_2 transport facilities and of retrofitting the power plant for CO_2 capture, the 2009 CCS Directive does not provide any form of guidance. However, the general concepts of "economic feasibility" and "technical feasibility" are outlined elsewhere in EU law and policy. For example, the European Commission's 2008 *Guide to Cost Benefit Analysis of Investment Projects*[51] provides detailed guidance and case studies on financial and economic analysis of projects, including guidance on feasibility analysis[52]. Indeed, on the basis of such guidance, amongst other sources, a report on CCS readiness at Šoštanj, co-authored by one of the present Complainants, has convincingly defined "economically feasible" in the context of CCS readiness to mean

> 'that, during the operating life of the plant, there is a probability that a plant if retrofitted and operated with CCS can earn a reasonable rate of return on investment. The plant's total cost for capture, transport, and storage would include planning, construction capital, and operating costs, including the time value of money.'[53]

39. Despite the absence of detailed guidance in or under the CCS Directive, Recital 47 to that measure does provide a broad indication of what an assessment of economic feasibility might consider, stating that

> 'The economic feasibility of the transport and retrofitting should be assessed taking into account *the anticipated costs of avoided CO2* for the particular local conditions in the case of retrofitting and *the anticipated costs of CO2 allowances in the Community*. The projections should be based on the latest evidence; a review of technical options and an analysis of uncertainties in the assessment processes should also be undertaken.'[54]

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[50] *Supra*, n. 48, at 18, para. 42.
[51] European Commission, *Guide to Cost Benefit Analysis of Investment Projects: Structural Funds, Cohesion Fund and Instrument for Pre-Accession* (2008), available at: http://ec.europa.eu/regional_policy/sources/docgener/guides/cost/guide2008_en.pdf
[52] *Ibid.*, at 33.
[53] Bellona Foundation / Environmental Law Service, *CCS Readiness at Šoštanj: Ticking Boxes or Preparing for the Future?*, (2011), at 13.
[54] Emphasis added.

40. Therefore, the assessment should attempt to balance the costs likely to be incurred in deploying CCS technology with its possible economic benefits having regard to the likely cost of CO_2 emission allowances. Taking Recital 47 as its starting point, the 2009 UK Guidance on assessment of CCS readiness sets out a reasonably comprehensive methodology and set of parameters for assessment of the economic feasibility of CCS, which

> 'will allow applicants to demonstrate the full range of costs and benefits associated with the deployment of CCS to any given plant, thereby fulfilling one of the underlying aims of the [UK] Government's CCR policy (identifying, and not granting development consent to, those plants where it is unlikely that there will ever be a reasonable business case for CCS) in a manner which takes full account of all relevant technical and economic factors and is not inconsistent with EU policy as represented in Directive 2009/31/EC.'[55]

In practical terms, in order to ensure 'that the assessments are a meaningful part of the CCR process', the UK Government advises that 'applicants should conduct a single economic assessment which encompasses retrofitting of capture equipment, CO_2 transport and the storage of CO_2'.[56] The UK guidance also provides an indicative list of information sources which might be helpful in conducting the assessment of economic feasibility,[57] including, for example, the UK Department of Energy and Climate Change's own *Energy Market Outlook* and a relevant report by McKinsey & Co[58].

41. The list of parameters to be taken into account includes, *inter alia*: the assumed exchange rate; internal rate of return; fuel price; carbon price; power output with/without CCS; lifetime load factor; CO_2 emitted with/without CCS; cost of transport (construction and operation); cost of retrofitting capture equipment (construction and operation); and cost of storage (permitting and operation)[59]. As regards a methodology for the assessment of economic feasibility, the UK Guidance proposes a model structure, within which applicants should justify the capture, transport and storage options chosen for their proposed development. Such a model should compare:
    a) 'the cost of producing electricity without CCS, but having to buy EU allowances for 100% of CO_2 emitted, with
    b) the cost of producing electricity with CCS, assuming EU allowances do not have to be bought for the amount of CO_2 stored …

    Applicants could then vary the range of the individual parameters within the model (for example fuel price or capital costs) to determine the range of carbon

[55] *Supra*, n. 48, at 24, para. 64.
[56] *Ibid.*
[57] *Ibid.*, Annex E(ii), at 56.
[58] *Ibid.*
[59] *Ibid.*, at 25, para. 68.

prices for which operational CCS is economically feasible – this would give a measure of the uncertainty within the model.'[60]

The UK Guidance advises that, ultimately, after having conducted an assessment and made a determination of economic feasibility, the applicants should 'then produce a clear summary of their results and state under which reasonable scenarios and parameter ranges operational CCS would be economically feasible'[61].

42. Thus, it is clear that sophisticated guidance as to best practice exists, which ought to have informed, to some extent, the Client's conduct of its assessment of economic feasibility. It will serve to inform the Compliance Review Expert's determination of the adequacy of such assessment and of the Bank's related oversight, though such guidance was never intended to be overly prescriptive and can only help to outline the nature of the assessment required in terms of its coverage, detail and intensity[62].

Technical Feasibility of CO_2 Capture and Transport

43. The Bellona Report helpfully suggests that the term "technically feasible" can be interpreted in the specific context of CCS readiness 'as meaning that technologies exist that can be applied to capture and transport and store a significant portion of the CO_2 emitted from the plant, while substantially preserving the original functionality of the plant'.[63] This common-sense interpretation is based on a general conception of the term "technically feasible" to mean that 'technical resources capable of meeting the needs of a proposed system can be acquired by the operator in the required time', which is incorrectly attributed by the Report's authors to Annex I of the Emissions Trading Scheme (ETS) Directive 2003/87/EC[64]. Further guidance exists and the Bellona Report cited above largely relies on a 2009 United Nations Industrial Development Organisation (UNIDO) manual on preparing industrial feasibility studies for its proposed methodology on assessing technical feasibility[65]. In addition, regarding the technical feasibility of retrofitting for CO_2 capture and storage, the 2009 guidance prepared by the UK Department for Energy and Climate Change advises applicants that

> 'the Government intends to consider applicants' CCR assessments with a "no barriers" approach', whereby '[a]pplicants are asked to demonstrate that there are no known technical or economic barriers which would prevent the installation and operation of their chosen CCS technologies'.[66]

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[60] *Ibid.*

[61] *Ibid.*, at 26, para. 68.

[62] See, for example, the UK Guidance at 25, para. 68, which expressly provides:

> 'A model assessment structure is suggested below on which applicants may choose to base their economic assessments. However, this is not the only way in which the assessment could be addressed and it is the responsibility of applicants to justify the capture, transport and storage options chosen for their proposed development.'

[63] *Supra*, n. 53, at 13.

[64] Directive 2003/87/EC establishing a scheme for greenhouse gas emission allowance trading within the Community, OJ L 275/32, 25 October 2003, Annex I,

[65] W. Behrens and P. M. Hawranek, *Manual for the Preparation of Industrial Feasibility Studies* (UNIDO, 2009).

[66] *Supra*, n. 48, at 14, para. 27, which goes on to explain that

In preparing such assessments, UK applicants are advised, rather helpfully, that:

> 'Government envisages that the technical feasibility study for retrofitting CCS equipment will take the form of a written report and accompanying plant designs which:
>
> • make clear which capture technology is currently considered most appropriate for retrofit in the future to the power station; and
> • provide sufficient detail to enable [the relevant authorities to decide] on whether the applicant has sufficiently demonstrated there are no currently known technical barriers to subsequent retrofit of the declared capture technology.'[67]

44. Regarding assessment of the technical feasibility of CO_2 transport to the proposed storage area, the same UK guidance elaborates extensive advice[68]. For example, in terms of a feasible route from the plant, it suggests that applicants should, for the first 10 km surrounding the power station, identify a favoured route within a 1 km wide corridor, while also identifying major pre-existing obstacles arising due to safety or environmental concerns[69]. Beyond the first 10 km from the power station, applicants are advised to identify a 10 km wide corridor to the proposed storage area (or to the coast in the case of an off-shore storage area)[70]. The guidance also makes it clear that,

> 'given the inevitable uncertainty about the precise route and what might by the CCS stage in the future be the safety and environmental requirements, we do not envisage any formal environmental impact assessment (EIA) being undertaken', though '[t]his will however need to be done when an operator wishes to fit CCS to the plant'.[71]

Generally, it advises that '[a] precautionary approach will need to be taken by developers at the CCR stage, given the developing regulatory regime, to ensure that no known barriers exist along the proposed route'[72]. The guidance also sets out the essential contents of the required 'Transport Technical Feasibility Study', stating that it should include a marked-up map of the route and a written report with sufficient detail to identify the preferred form and route(s), as well as any major pre-existing obstacles. It further states that applicants should also

- demonstrate that there are no barriers to the transport of the CO_2 by the declared preferred method into the proposed storage site;
- confirm that no unavoidable safety obstacles exist within the identified route corridor, on the basis of current knowledge about the hazards posed by CO_2 transport; and
- suggest methods by which the environmental impacts on an unavoidable designated (ecological) site within the route corridor could be mitigated on the basis of current knowledge at the time of the feasibility study[73].

> 'Government does not intend to prescribe the detail of how CCS technology will apply in individual cases, but does expect that applicants will follow best practice as far as this knowledge is available and provide a reasoned justification of their choices.'

[67] *Ibid.*, at 15, para. 30.
[68] *Ibid.*, at 18-23.
[69] *Ibid.*, at 18, para. 44.
[70] *Ibid.*, at 19, para. 46. It should be pointed out that UK Government policy dictates 'that only offshore areas are currently considered suitable by Government for CO_2 storage', see *ibid.*, at 15, para. 33.
[71] *Ibid.*, at 19, para. 48.
[72] *Ibid.*, at 21-22, para. 58.
[73] *Ibid.*, at 23, para. 61.

Allocation of Space for Carbon Capture Equipment

45. Finally, regarding the second phase of the CCS readiness assessment required under Article 33(2) if the first phase shows that CCS is feasible, *i.e.* that of ensuring 'that suitable space on the installation site for the equipment necessary to capture and compress CO_2 is set aside', the CCS Directive provides little practical guidance. However, detailed technical guidance on space allocation is provided in a 2006 report by the International Energy Agency (IEA), which sets out approximate minimum land footprint for CO_2 capture installations for different types of gas and coal plant[74]. In addition, using such IEA technical values as a starting point, the 2009 guidance prepared by the UK Department for Energy and Climate Change provides useful practical advice on the factors to be considered in the allocation of suitable space, as well as a methodology for ensuring compliance with the relevant UK legislative requirements[75]. For example, whilst again acknowledging that prescriptive requirements are not appropriate[76], the UK guidance provides that

    'Assessments of the appropriate space to be set aside for the subsequent retrofit of capture equipment shall depend on:

    - the type of capture technology declared as likely to the chosen (the key variable);
    - the size/number of the power generating units;
    - the input fuel for the power units;
    - decisions about whether the necessary CO_2 processing would be on or off site;
    - ensuring the safe storage of chemicals;
    - avoiding congestion on site for safety both during construction and operation; and
    - future progress in developing the capture technologies which may reduce the space required for the related equipment.'[77]

    More generally, the UK guidance requires that applicants demonstrate that 'suitably located land will be available for them to use for the capture element of the CCS chain at the point of retrofit', and addresses such related issues as the nature of legal title over or rights to use such land[78]. Regarding the information required to assist in the making of such assessments, the UK guidance advises that 'operators should include outline site plans (drawings) in their applications', which

    'should be sufficiently detailed to show:

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[74] IEA Greenhouse Gas R&D Programme (IEAGHG), *CO_2 Capture as a Factor in Power Plant Investment Decisions*, IEAGHG Report 2006/8, available at: http://www.ieaghg.org/docs/General_Docs/Reports/2006-8%20Capture%20in%20power%20stations.pdf

[75] *Supra*, n. 48, at 9-12.

[76] Para. 13, *ibid.*, at 10, provides

'Since capture technologies have not yet been demonstrated on a commercial scale, it is not appropriate for Government to impose prescriptive requirements on the amount of space which should be set aside. Applicants should make a reasoned justification for their proposed space allocation on the basis of their chosen capture technology. '

[77] *Ibid.*, at 10, para. 12.

[78] *Ibid.*, at 11, para. 15.

- the footprint of the combustion plant;
- the location of the capture plant including any air separation units;
- the location of the CO_2 compression equipment;
- the location of any chemical storage facilities; and
- the exit point for CO_2 pipelines from the site.'[79]

46. While this guidance concerns the specific requirements for consent applications made under Section 36 of the 1989 UK Electricity Act, it makes it quite clear that

> 'This guidance implements both Article 33 of the Directive and the Government's further requirement that if a proposed power station is subject to the Directive requirements, it will only be granted development consent if it is assessed positively against the Article 33 criteria.'[80]

Thus, as an example of highly developed EU Member State guidance on the effective implementation of Article 33 of the CCS Directive, it is relevant in assisting the Compliance Review Expert to determine the adequacy of the assessment of CCS readiness at issue in the current Complaint. However, once again it merely helps to outline the nature of the assessment required in terms of its coverage, detail and intensity.

Compatibility with EU Climate Goals

47. The Complainants allege that, '[i]n approving this project, the EBRD has failed to ensure that TEŠ meets relevant EU environmental requirements as stipulated by the EBRD Environmental and Social Policy 2008 PR 3.5'.[81] As regards the specific 'relevant EU environmental requirement' with which the Bank is charged with non-compliance in this ground of complaint, the Complainants focus on the 2009 Conclusions of the European Council (Presidency Conclusions) calling for 'at least 50 percent worldwide reductions and aggregate developed country emission reductions of at least 80-95 percent by 2050'.[82] Therefore, it is necessary for the purposes of this Compliance Review to carefully examine the relevance, applicability and normative nature of this measure. Despite the Complainants' contention that

> '[s]uch a high-level commitment to these targets in our opinion clearly constitutes an "EU requirement" that the EBRD needs to take into account when making decisions on carbon-intensive infrastructure that will be operating for around the next 40 years',

the text of the document itself does not at all appear to impose any kind of imperative obligation upon any category of actor, even EU Member States or EU institutions.

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[79] *Ibid.*, at 12, para. 18.
[80] *Ibid.*, at 7, para. 2.
[81] *Complaint*, at 7. PR 3.5, which relates to ' Pollution Prevention and Abatement', provides that:
'projects will be designed to comply with relevant EU environmental requirements as well as with applicable national law, and will be operated in accordance with these laws and requirements.'
[82] *Complaint*, at 6, referring to Council of the European Union, Presidency Conclusions, 1 December 2009 (15265/1/09), available at http://www.consilium.europa.eu/uedocs/cms_data/docs/pressdata/en/ec/110889.pdf

For example, regarding the emission reduction targets cited above, the document itself explains that

> 'such *objectives* should provide both the *aspiration* and the *yardstick to establish mid-term goals*, subject to regular scientific review. It supports an *EU objective*, in the context of necessary reductions according to the IPCC by developed countries as a group, to reduce emissions by 80-95% by 2050 compared to 1990 levels.'[83]

Thus, as a classic example of a "policy" statement, the Presidency Conclusions appear to establish a quantitative goal or target, which subsequent legal norms should aim to achieve. However, they fall considerably short of the 'clear quantitative or qualitative requirements that are applicable at facility level', and thus capable of amounting to 'EU environmental requirements' for the purposes of PR 3.2[84] and PR 3.5.

48. Further, it is apparent from an holistic reading of the Presidency Conclusions that the targets and goals contained therein were intended to set out the Union's position in advance of the imminent Copenhagen Conference in December 2009[85] and were, therefore, largely conditional upon the unrealised hope of 'reaching a global, ambitious and comprehensive agreement' for the post-Kyoto period[86]. For example, regarding the need to finance ambitious targets for climate change mitigation and adaptation, the document states quite equivocally that '[t]he EU and its Member States in this context are ready to contribute their fair share of these costs. The European Council *stresses that this contribution will be conditional* on other key players making comparable efforts.'[87] Therefore, the statements relied upon by the Complainants in relation to the current ground of complaint do not appear to be sufficiently clear, imperative and unconditional in order to be capable of giving rise to a "relevant EU environmental requirement" for the purposes of PR 3.5, with which the Bank might be required to comply.

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[83] *Ibid.*, at 3, para. 7 (emphasis added).

[84] PR 3.2 informs the precise meaning "EU environmental requirements" by providing that:

> 'As a signatory to the European Principles for the Environment, the EBRD is committed to:
>
> - …
> - requiring compliance with relevant EU environmental standards, in particular those related to industrial production, water and waste management, air and soil pollution, occupational health and safety, and the protection of nature, *where these can be applied at the project level* (hereafter: "EU environmental requirements")' (emphasis added).

In addition, an explanatory footnote to PR 3.2 further explains that

> 'For the purpose of this Policy and PRs, EU environmental standards can be applied at the project level where the EU legislative document itself contains *clear quantitative or qualitative requirements that are applicable at facility level (as opposed to, for example, ambient level*)' (emphasis added).

[85] 15th Session of the Conference of the Parties to the UNFCCC and 5th Session of the Meeting of the Parties to the Kyoto Protocol.

[86] *Ibid.*, at 3, para. 5. See also, para. 9, at 4, which states that

> 'Action by the European Union alone will not be enough. A comprehensive and ambitious agreement can only be reached if all parties contribute to the process. Other developed countries should also demonstrate their leadership and commit to ambitious emission reductions and step up their current pledges. Developing countries, especially the more advanced, should commit to appropriate mitigation action, reflecting their common but differentiated responsibilities and respective capabilities.'

[87] *Ibid.*, at 6, para. 17 (emphasis added).

49. Even to the extent that these targets continue to represent established Union policy, as broad emissions reduction targets they leave a great deal of future discretion to policy-makers in both EU institutions and Member States to decide how they are to be achieved in practical terms. Therefore, they could never create binding requirements for EBRD, despite the multiple allusions in the ESP to the nature of the Bank's commitment in respect of climate change. For example, among the general provisions of the ESP, Paragraph 6 states emphatically that:

> 'The Bank recognises the importance of climate change mitigation and adaptation and their high priority for the Bank's activities in the region. It intends to further develop its approach towards climate change, notably as regards the reduction of greenhouse gases, adaptation, promotion of renewables and improvement of energy efficiency, in view of strengthening the treatment of these elements in its operations[88].

However, in the absence of such further developments in its approach, such a provision could not be understood to incorporate broad EU policy targets regarding GHG emissions reduction into the ESP. Similarly, PR 3 includes among its objectives, 'to promote the reduction of project-related greenhouse gas emissions'[89], while PR 3.17, 3.18 and 3.19 impose obligations on the Client and the Bank regarding 'the reduction of project-related greenhouse gas (GHG) emissions in a manner appropriate to the nature and scale of project operations and impacts'[90]. Indeed, PR 3.19 suggests that only discrete project-specific requirements, such as the assessment of CCS readiness required under Article 33(1) of the CCS Directive at issue in the previous ground of complaint, are obligatory under the ESP, rather than broad nationally-calculated emissions reduction targets[91]. Thus, if the Bank were to attempt to apply these broad policy targets to individual projects, with a view to assessing the compatibility of such projects therewith, and in order to ensure that Slovenia could achieve the planned 80-95 percent reduction in greenhouse gas emissions by 2050, this would amount to an unacceptable intrusion upon Slovenia's exercise of its sovereign discretion in the development and implementation of its climate and energy policy.

50. More generally, the EU's policies on climate change are built around four core initiatives, collectively known as the "Climate and Energy Package",[92] which comprises:

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[88] See also Paragraph 5, which provides that:

> 'Particular attention will be given to projects which include elements that focus upon priority environmental and social issues facing the region and which promote implementation of relevant EU strategies, such as climate change mitigation and adaptation …'.

[89] PR 3.3.

[90] PR 3.17.

[91] PR 3.19 provides that

> 'the Client will assess technically and financially feasible and cost-effective options to reduce its carbon intensity during the design and operation of the project, and pursue appropriate options.'

[92] European Commission, *The EU Climate and Energy Package*, available at: http://ec.europa.eu/clima/policies/package

1. Revision of the Emissions Trading Scheme (ETS), which will see the "cap" for emissions reduced to 21% below 2005 levels in 2020;
2. An "Effort Sharing Decision", which sets targets for sectors not covered by the ETS;
3. Binding national targets for renewable energy to raise the average renewable share across the EU to 20% by 2020; and
4. A legal framework to promote the development and safe use of carbon capture and storage (CCS).

While the ETS[93] applies to the thermal power generation sector and has partial relevance to the present Complaint to the extent that it impacts upon the economic feasibility of CCS, the Effort Sharing Decision[94] only establishes emission reduction targets for the period 2013-2020 for sectors not covered by the ETS, including land use, land use change and forests (LULUCF), international shipping, and aviation. Clearly, the various EU directives creating binding targets for promotion of renewable energy[95] are of no relevance to the present Complaint, while the implications of the CCS Directive are addressed under the previous ground of complaint.

51. It is also useful to note that the European Commission in 2011 published *A Roadmap for moving to a competitive low carbon economy in 2050*[96], discussing how the EU might move to new or more efficient sources of energy, while in 2010 it published a more detailed *Analysis of options to move beyond 20% greenhouse gas emission reductions and assessing the risk of carbon leakage*[97], which discusses the various options which the Commission will consider if the decision is made to move from an emissions reduction target of 20% to a more ambitious 30%. However, these documents amount to nothing more than policy proposals at this point, which provide some indication of the direction in which EU law might develop in the future.

52. Therefore, the Compliance Review Expert has determined that the EU climate goals, with which the Complainant contends the Šoštanj Project is incompatible, create no clear and imperative standards or obligations 'which can be applied at the project level', and thus do not amount to "EU environmental requirements" for the purposes of PR 3.5[98]. On this basis, the Compliance Review Expert will not proceed to examine further this ground of complaint.

[93] Regulated by Directive 2003/87/EC, and expanded by Directive 2009/29/EC and others.
[94] Decision 406/2009/EC on effort sharing between Member States on greenhouse gas emission reductions.
[95] Directive 2009/28/EC on the promotion of the use of energy from renewable sources; Directive 2001/77/EC on the promotion of electricity from renewable energy sources in the internal electricity market (amended by Directive 2006/108/EC and to be repealed by Directive 2009/28/EC); and Directive 2003/30/EC on the promotion of the use of biofuels or other renewable fuels for transport.
[96] COM(2011) 112 final, available at: http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=COM:2011:0112:FIN:en:PDF
[97] COM(2010) 265 final, available at: http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=COM:2010:0265:FIN:EN:PDF
[98] See PR 3.2.

III. ANALYSIS

Assessment of CCS Readiness

53. As regards the CCS readiness of the Šoštanj Project, consultants acting on behalf of the Client conducted a study in May 2010 on *CO_2 Capture Readiness of Unit 6 in Thermal Power Plant Šoštanj*, which concluded that Unit 6 of the Šoštanj Power Plant fulfils the requirement of CCS readiness under EU legislation[99]. More importantly, an additional study was conducted in September 2010, which analysed various aspects of CCS readiness in considerably greater detail[100]. These aspects particularly included the availability of suitable storage sites and the economic feasibility of CO_2 capture and storage.

Availability of a Storage Site

54. As regards the availability of suitable CCS storage sites, the September 2010 Additional Study by EIMV outlines the total CCS storage capacity available in Europe[101] and provides greater detail on the potential storage sites available in Slovenia[102], particularly in the form of aquifers, but also in the form of oil/gas fields and coal fields. As the Additional Study's data collection, the first step in assessing the availability of storage sites identified under Annex I of the CCS Directive[103], relies upon the datasets produced under the EU *GeoCapacity Project*[104], the first detailed pan-European assessment of CO_2 storage capacity, it can be understood as satisfying one of the requirements set out under the UK Guidance cited above, *i.e.* 'reliance on authoritative data sources for identification of the suitability of these areas and geological formations'[105]. As regards the characterisation of the available sites, the third step identified under Annex I, the Additional Study quite reasonably relies on the EU *GeoCapacity Project's* findings. In addition, as regards specific possibilities for likely suitable CCS storage sites in Slovenia, the Client's consultants (EIMV) refers to the ongoing research work and CO_2 injection trials at the Velenje coal mine in the vicinity of the Šoštanj plant[106].

55. Taking account of the fact that the conservative estimate for Slovenia of storage capacity in aquifers, where by far the largest share of Slovenia's CO_2 storage potential lies, amounts to 92 million tonnes, while the total amount of CO_2 which might be

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[99] Elektroninštitut Milan Vidmar (EIMV), *CO_2 Capture Readiness of Unit 6 in Thermal Power Plant Šoštanj*, Paper No. 2034, (Ljubljana, May 2010).
[100] Elektroninštitut Milan Vidmar (EIMV), *CO_2 Capture Readiness of Unit 6 in Thermal Power Plant Šoštanj (Addition)*, Paper No. 2034, (Ljubljana, September 2010).
[101] *Ibid.*, at 3-4.
[102] *Ibid.*, at 5-6.
[103] Annex I establishes 'Criteria for the Characterisation and Assessment of the Potential Storage Complex and Surrounding Area'.
[104] See further, http://www.geology.cz/geocapacity
[105] *Supra*, n. 48, at 18, para. 42.
[106] *Supra*, n. 100, at 6-7. These trials are also referred to in the *TEŠ Power Plant and Premogovnik Coal Mine Environmental Impact Assessment Addendum* (October 2009), at 91-93.

captured from Unit 6 at Šoštanj over the course of its 34 years of expected operation ranges up to 76.2 million tonnes, the Additional Study acknowledges the possibility that there may not be enough suitable storage capacity in Slovenia and considers suitable locations elsewhere in Europe[107]. It proceeds to examine the situation in neighbouring Croatia, where '[c]onservative storage capacity estimates in comparison with total emissions from large point sources correspond to 580 years of storage'[108], as well at neighbouring Hungary with a corresponding 27 years of storage[109] and Italy with a corresponding 47 years of storage[110]. On this basis the Additional Study convincingly concludes that '[f]rom the available storage capacities point of view Unit 6 of the Thermal power plant Šoštanj has no obstacles to retrofit carbon capture and storage technology'[111].

56. Therefore, though the Additional Study itself engages in neither 'building the three-dimensional static geological earth model' (Step 2) nor 'characterisation of the storage dynamic behaviour, sensitivity characterisation, risk assessment' (Step 3), as stipulated under Annex I to the CCS Directive, it relies on the detailed technical analysis conducted, and data provided, under the EU *GeoCapacity* Project, which would appear to be leading-edge in every respect[112]. In addition, the Additional Study quite clearly satisfies the remaining two practical requirements for an adequate assessment of the availability of a suitable CCS storage site identified under the UK Guidance, *i.e.*
    - identification of a possible storage area, including delineating the geographical extent of that area, and identification within that area of at least two "viable" or "realistic" geological formations; and
    - a short summary including an estimate of the total volume of CO_2 likely to be captured and stored by the power station and an estimate of the CO_2 storage potential of the area(s) identified by the applicant[113].

57. It must be borne in mind that Article 33 of the CCS Directive merely stipulates that it is necessary to ensure that operators have assessed whether certain conditions are met, including that 'suitable storage sites are available'. In outlining the range of

[107] *Ibid.*, at 7.
[108] *Ibid.*, at 7-9.
[109] *Ibid.*, at 10-11.
[110] *Ibid.*, at 12-14, though this figure does not take account of what the Additional Study describes as 'the promising potential Adriatic offshore storage' facility at Porto Tolle Power Plant with an estimated storage capacity of 1,300 million tonnes, which 'is according to its location and capacity also appropriate for storing CO_2 captured in Thermal power plant Šoštanj'.
[111] *Ibid.*, at 25.
[112] See, for example, the detailed characterisation of potential CCS storage sites in Croatia in EU GeoCapacity, *Assessing European Capacity for Geological Storage of Carbon Dioxide* (D16, WP2 Report, 2009), at 97-106. The GeoCapacity Project developed detailed criteria for the purposes of assessing such potential European storage sites, see EU GeoCapacity, *Capacity Standards and Site Selection Criteria* (D26, WP4, 2009). Both reports available at http://www.geology.cz/geocapacity/publications
[113] *Supra*, n. 48, at 18, para. 42.

regulatory requirements which might be imposed upon operators in this regard, the Global CCS Institute advises that, as a minimum,

> 'To ensure that sufficient storage capacity is available, the total quantity of CO_2 that a project is expected to capture annually and over its lifetime should be estimated as part of the requirement to select appropriate storage sites. At the initial stage, it is important that developers identify multiple storage options for storing the full captured volume, given the inherent geological uncertainty in storage sites and the potential for unexpected complications due to lack of sufficient geological data.'[114]

The September 2010 Additional Study clearly meets this essential requirement. The Institute further suggests that

> 'Once the potential storage site(s) are screened and a particular storage site(s) can be chosen, developers *could be required* to obtain contractual options to the site(s). At a higher level, developers *could be required* to obtain the right to use the storage site(s) for injection in the future'.[115]

However, these further requirements are simply identified as ones which might also be introduced by policy-makers in order to 'reduce the lead time and the cost of future retrofit, and increase the feasibility for storing the plant's CO_2', as well as reducing the uncertainty in cost estimates, 'as developers know which storage sites they have access to'[116]. There is absolutely no reason to believe that these further obligations might be required under Article 33 of the CSS Directive. On this basis, the Compliance Review Expert has determined that the Client has conducted an adequate assessment of the availability of a suitable storage site(s).

<u>Economic Feasibility of CO_2 Capture, Transport and Storage</u>

58. As regards assessment of the economic feasibility of CCS at the Šoštanj facility, the September 2010 Additional Study includes a detailed evaluation. It first of all evaluates CO_2 capture and compression costs and transportation costs, before proceeding to examine storage costs, in line with the advice contained in the UK Guidance that 'applicants should conduct a single economic assessment which encompasses retrofitting of capture equipment, CO_2 transport and the storage of CO_2'[117]. Consistent with Recital 47 to the CCS Directive[118] and the practical advice

[114] Global Carbon Capture and Storage Institute / ICF International, *CCS Ready Policy: Considerations and Recommended Practices for Policymakers* (2010), at 30.
[115] *Ibid.*, emphasis added.
[116] *Ibid.*
[117] *Supra*, n. 48, at 24, para. 64.
[118] Recital 47 provides, *inter alia*, that

> ''The economic feasibility of the transport and retrofitting should be assessed taking into account *the anticipated costs of avoided CO2* for the particular local conditions in the case of retrofitting and *the anticipated costs of CO2 allowances in the Community*.' (Emphasis added).

offered by the UK Guidance[119], it then goes on to compare the costs likely to be incurred in CCS with the likely costs of allowances under the EU emissions trading scheme (ETS).

59. Regarding CO_2 capture and compression costs, the Additional Study takes account of both investment costs, which it estimates at €370 million or €620 per kW, and operation and maintenance costs, which it estimates at €30 million[120]. Taken together, the investment costs and operation and maintenance costs are estimated at €23 per MWh, rising to €31.1 per MWh when account is taken of loss of electricity generation due to CCS. Regarding CO_2 transportation costs, the Additional Study examines the costs of transport by pipelines, including construction costs, installation costs, operation and maintenance costs and other costs, and those of transport by marine shipping, including investment, operation and maintenance costs[121]. It then differentiates between transportation costs to suitable storage sites in Slovenia, which it estimates at €1.3 per MWh[122], and to suitable storage sites in Croatia and Italy (250 km from the Šoštanj site), which it estimates at €2.2 per MWh[123], in both cases taking account of loss of electricity generation. The Additional Study emphasises that the *GeoCapacity Project* has established that 'in Slovenia there are enough storage capacities to store captured CO_2 from Unit 6'[124] and, further, that in the case of transportation to locations outside of Slovenia, CO_2 from certain other major stationary emitters in Slovenia could also be transported by the same pipeline network, thus reducing costs[125].

60. Regarding the costs associated with CO_2 storage, the Additional Study takes account of storage option type, depth, and geological characteristics to estimate the costs of storage in three types of geological formation, *i.e.* onshore saline formations (aquifers) at €2.2 per tonne of CO_2, offshore saline formations at €6.0 per tonne, and disused oil or gas fields at €4.7 per tonne. Assuming that the most convenient option in respect of CO_2 captured at Šoštanj is that of storage in onshore saline formations or in coal mines, the Additional Study calculates that the likely storage cost per unit of electricity produced will be €3.3 per MWh, when costs due to loss of electricity production are included[126].

61. On the basis of detailed calculations, founded upon a range of assumptions which appear quite reasonable and credible, the Additional Study estimates the likely overall cost of carbon capture and storage at €30.6 per MWh in the case of storage within

[119] *Supra*, n. 48, at 25, para. 68.
[120] *Supra*, n. 100, at 15.
[121] *Ibid.*, at 16.
[122] *Ibid.*, at 17.
[123] *Ibid.*, at 19.
[124] *Ibid.*, at 16.
[125] *Ibid.*, at 18.
[126] *Ibid.*, at 20.

Slovenia, and at €31.4 per MWh in the case of storage abroad[127]. It then compares the likely range of costs of retrofitting CCS technology at Šoštanj with that of buying CO_2 emission allowances and concludes that the estimated 'lowest CCS cost implementation of new technology is competitive with emission trading when allowance cost more than 33 €', and that '[i]n case of highest carbon capture and storage cost the point where CCS yields more than emission trading is at 46 € per allowance'[128]. According to the Client's consultants, the results of this evaluation 'confirm that retrofitting carbon capture and storage technology to Unit 6 of the Thermal power plant Šoštanj is economically feasible and in range with cost induced by emission trading'[129].

62. At any rate, having regard to the stipulations of Recital 47 and to the practical guidance on provided by the UK Government[130], it seems quite clear that the Client has conducted an adequate assessment of the economic feasibility of CO_2 capture, transport and storage as envisaged under Article 33 of the EU CCS Directive. On this basis, the Compliance Review Expert determines that the Client has conducted this aspect of the CCS assessment in an adequate manner and, consequently, that the Bank is not in non-compliance in respect of this matter.

Technical Feasibility of CO_2 Capture and Transport

63. Regarding the technical feasibility of future CO_2 capture and transport, the Final Technical Due Diligence Report states confidently, in the context of its examination of CCS readiness, that '[a]ll solutions relating to cleaning of flue gases (dust, SO_2, NO_χ) are designed in such a manner, which will allow upgrading of this unit at any time'[131]. Similarly, the EIA Addendum reports that '[a]ll solutions related to treatment of flue gases have been prepared in view of possible upgrading of the plant'[132]. Indeed, consistent with the "no barriers" approach adopted by the UK Government[133], the EIA Addendum elaborates upon the requirements of technical feasibility before outlining the steps taken in respect of the Šoštanj project. It states quite categorically that

> 'Developers of capture ready plants should take responsibility for ensuring that all known factors in their control that would prevent installation and operation of CO_2 capture have been identified and eliminated and this might include:
> - a study of options for CO_2 capture retrofit and potential pre-investments,
> - inclusion of sufficient space and access for the additional facilities that would be required, and

[127] *Ibid.*, at 21.
[128] *Ibid.*, at 23.
[129] *Ibid.*, at 26.
[130] *Supra*, n. 48, at 23-25, paras. 62-68.
[131] Pőyry Energy Ltd., *Final Technical Due Diligence Report* (11 December 2009), at 26, para. 3.2.5.
[132] TEŠ / HSE, *TEŠ Power Plant and PV Coal Mine Environmental Impact Assessment Addendum*, (October 2009), at 94, para. 5.3.
[133] *Supra*, n. 48, at 14, para. 27.

- identification of reasonable route(s) to storage of CO_2.'[134]

It then proceeds to outline in some detail the steps taken by 'ERICo Velenje, an Environmental Research & Industrial Co-operation Institute [which] carries out the researches in the field of CCS technology for TPP Šoštanj since 2003', including trials commenced in January 2008 on sequestration of CO_2 in the coal seam at the Velenje Coalmine[135]. Regarding the actual technology to be used in the storage of CO_2, the EIMV Additional Study on CCS readiness makes it clear that ongoing research and trials are focused on Enhanced Coal-Bed Methane (ECBM) technology[136].

64. Regarding the available options for CO_2 capture technologies, the EIA Addendum concludes, having regard to the low CO_2 concentrations in flue gases, that

> 'In thermal power plants where the classic pulverised coal combustion process is used for electric energy production … capture technologies like chemical and physical solvent scrubbing are used or their combination, *i.e.* hybrid solvent scrubbing.'[137]

However, the document also recognises that, while '[n]owadays the most useful technology is solvent scrubbing. In future adsorption and membranes will be predominate'.[138]

65. The initial EIMV Study provides some detail on the capture process proposed, as it analyses known requirements of amine based absorption capture process and compares them with the characteristics of the planned Unit 6'[139]. It describes the workings of the preferred system of CO_2 capture plant in considerable detail, even providing schematic representations both ofthe gas flow from the steam boiler through emission control technologies to the CO_2 capture plant, and of the capture process itself[140]. As regards the technical feasibility of retrofitting this particular CO_2 capture technology, the May 2010 Study conducts a quite thorough technical assessment, concluding, *inter alia*, that the expected CO_2 concentration in the exhaust gases is suitable for CCS implementation[141], that catalytic reduction will ensure flue gases meet the criteria in terms of NO_χ content[142], that adequate inhibitors will reduce O_2 to the required level[143], that electrostatic filters will remove sufficient dust[144], and that the flue gas temperature will be within the correct range for CO_2 absorption.[145]

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[134] *Supra*, n. 132, at 91, para. 5.2.
[135] *Ibid.*, at 91-93, para. 5.2.
[136] *Supra*, n. 100, at 6, para. 2.2.
[137] *Supra*, n. 132, at 92, para. 5.2.
[138] *Ibid.*
[139] *Supra*, n. 99, at 17, para. 4.
[140] *Ibid.*, at 17-19, para. 4.1.
[141] *Ibid.*, at 20, para. 4.1.1.
[142] *Ibid.*, at 21, para. 4.1.1.
[143] *Ibid.*, at 22, para. 4.1.1.
[144] *Ibid.*
[145] *Ibid.*

Similarly, regarding the solvents to be used for CO_2 absorption and other additives to be applied to flue gases, the Initial Study concludes that the '[t]ransport, storage, handling and managing of the additional raw materials as well as waste products shall not represent obstacles for adding capture technology'[146]. Likewise, the Study concluded that the anticipated increase in the use of water and fuel, and consequent increased quantity of waste, due to the reduction in the efficiency of the power plant caused by CO_2 capture technology, 'does not represent a limiting factor for implementation of CO_2 capture technology'[147]. The Initial Study also includes a detailed assessment of the energy required in the CO_2 capture process and concludes that sufficient process heat would be provided by steam taken directly from the steam turbine[148].

66. Though the Bellona Report suggests that an extensive range of issues ought to be clarified and taken into account in any adequate assessment of the technical feasibility of CO_2 capture, including the identification of preferred capture technologies, the preparation of a preliminary design for capture facilities and their integration into the plant, and the compilation of a list of companies which can supply construction and operation services for capture facilities[149], this would appear to represent a somewhat idealised conception of emerging best practice in respect of CCS readiness – to which the Bank might opt to have regard in its due diligence appraisal of future projects involving thermal power generation plant – rather than an existing requirement of EU environmental law, which might inform the interpretation and application of obligations currently arising under PR 3 of the ESP. Therefore, the Compliance Review Expert determines that this aspect of the CCS assessment was conducted in an adequate manner and, consequently, that the Bank is not in non-compliance in respect of this matter.

67. Regarding assessment of the technical feasibility of CO_2 transport to the storage area(s), the various options were examined quite closely in the course of the economic evaluation of transportation costs conducted for the EIMV Additional Study. For example, the Additional Study provides maps showing the distances to the most likely suitable storage sites, both within Slovenia[150] and beyond Slovenian borders[151]. Indeed, in the case of permanent storage both within and beyond Slovenia, the Additional Study quite emphatically proposes that '[t]he transport of CO_2 to permanent storage sites … will be carried out exclusively by gas pipeline' and, further, that '[t]he transmission network, designed to transport carbon dioxide, shall

[146] *Ibid.*, at 23, para. 4.1.2.
[147] *Ibid.*
[148] *Ibid.*, at 24-25, para. 4.1.2.
[149] *Supra*, n. 53, at 15, referring to standards of best practice proposed by the Global Carbon Capture and Storage Institute / ICF International, *supra*, n. 49.
[150] *Supra*, n. 100, at 18, para. 3.2.1.
[151] *Supra*, n. 100, at 19, para. 3.2.2.

most probably run in the vicinity of the existing gas pipeline'[152]. In order to demonstrate how this network could be used to transport captured CO_2 to either possible Slovenian storage sites or to transhipment points, the Additional Study reproduces a map of the Slovenian gas transmission network which also shows the other major sources of CO_2 emissions suitable for the retrofitting of CCS technology[153].

68. Though the Client does not appear to have prepared a dedicated 'Transport Technical Feasibility Study', as suggested under the UK Guidance[154], nor to have identified any 1 km and 10 km wide corridors for its preferred route(s)[155], it can be regarded as having met, albeit somewhat minimally, the key requirements of Article 33(1) of the CCS Directive, at least as they are currently understood. While the Additional Study does not identify and evaluate rights of way to access the pipeline corridor or shipping route or identify issues related to its compatibility with environmentally sensitive or protected areas[156], the intention to locate the CO_2 transport network alongside the existing gas transmission network largely obviates these concerns. Also, the total CO_2 transportation demands[157] are reasonably well understood, at least in respect of the Šoštanj plant. The purported requirements to prepare a timeline for the CCS transportation system permitting and construction[158], and to compile a list of companies capable of providing equipment, materials and services, required for construction and operation of a CO_2 transportation network[159], while commendable, would appear to go beyond what might reasonably be currently required under the CCS Directive, especially as the Client has considered the technical feasibility of the preferred "transport network" as understood under the Directive[160]. Therefore, the Compliance Review Expert declines to make a finding of non-compliance in respect of this aspect of the assessment of CCS readiness.

<u>Allocation of Space for Carbon Capture Equipment</u>

69. It is quite clear from various project documents examined that a specific location, which will become available from 2016, has been earmarked for siting the CO_2 capture technology as and when it is to be retrofitted to the plant. For example, the EIA Addendum points out that 'in the spatial plans for the construction of Unit 6, there is also a location for the completion of the carbon capture technology', where

[152] *Ibid.*, at 17-18, para. 3.2.1.
[153] *Ibid.*, at 18, Figure 9.
[154] *Supra*, n. 48, at 23, para. 61.
[155] *Ibid.*, at 18-23.
[156] Bellona Report, *supra*, n. 53, at 16.
[157] Bellona Report, *ibid.*, referring to Hawranek (1991).
[158] Bellona Report, *ibid.*, referring to Hawranek (1991).
[159] Bellona Report, *ibid.*, referring to standards of best practice proposed by the Global Carbon Capture and Storage Institute / ICF International, *supra*, n. 49.
[160] Article 3(22) of the CCS Directive provides that
> '"transport network" means the network of pipelines, including associated booster stations, for the transport of CO_2 to the storage site.'

'[t]he modernisation project provides, next to the unit, extra space for constructing the separator unit from flue gases'[161]. It continues to explain that '[a]fter the first January 2016 the area foreseen for CO_2 separator unit from flue gases … will be available (location of Unit 4 cooling tower)'[162]. The initial EIMV Report from May 2010 confirms that the '[a]vailable area enables the installation of the CO_2 capture and compression equipment' and provides a detail schematic representation of the area available and of its location within the power plant complex[163]. More specifically, it concludes that

> 'In its vicinity are available space capacities enabling subsequent installation of the carbon dioxide capture plant and the carbon dioxide compression equipment. Space availability even enables the retrofitting [of] the carbon capture plant in a way where the highest level of energy efficiency is ensured. Space availability meets the criteria for the placement requirements of carbon capture plant and CO_2 compression equipment.'[164]

70. Similarly, the Technical Due Diligence Report notes that '[n]ext to the plant there is extra space for construction of a facility for extraction of CO_2 from the flue gases at the location of the existing cooling tower of Unit 4, which will be obsolete after shutting down the unit in 2016'[165]. However, the Technical Due Diligence Report does express some concerns about the amount of space allocated:

> 'The key issue will be to divert the flue gases to a future CO_2 abatement system prior to entering the cooling tower and to have sufficient space for such an installation. The plant plot for the new unit is not provided with a lot of spare space. Therefore this potential future project will have to be investigated in more detail.'[166]

71. Despite such concerns, the Bank would appear to have satisfied, if somewhat minimally, the requirement to 'ensure that suitable space on the installation site for the equipment necessary to capture and compress CO_2 is set aside', which arises under the ESP and corresponds with the obligation imposed upon a competent authority under Article 33(2) of the CCS Directive. For example, if we use the official UK Guidance as a benchmark, though it represents a quite highly elaborated suite of national legislative obligations which would appear to go beyond what is strictly required under the CCS Directive, it is clear that the Client understands the type of capture technology likely to be chosen, the size and number of power generating units, the input fuel for the power units, whether CO_2 processing would take place on

[161] TEŠ / HSE, *TEŠ Power Plant and PV Coal Mine Environmental Impact Assessment Addendum*, (October 2009), at 94, para. 5.3.
[162] *Ibid.*
[163] *Supra*, n. 99, at 25-30, para. 4.1.3.
[164] *Ibid.*, at 25, para. 4.1.3.
[165] *Supra*, n. 131, at 26, para. 3.2.5.
[166] *Ibid.*

or off site, *etc.*[167], and, further, that on this basis the Client had a reasonably clear idea of the footprint of the combustion plant, the location of capture plant (including any air separation units and compression equipment), the location of any chemical storage facilities, and the exit point for CO_2 pipelines from the site[168]. For example, there should be ample available space for the location of chemical storage facilities within the Šoštanj complex, as the Client clearly plans for CO_2 processing to take place on-site.

72. While the Bellona Report argues, not unreasonably, that the allocation of space should involve the planning of detailed arrangements regarding '[l]ocation and land footprint of capture plant, compression equipment, chemical storage facilities and exit point'[169], this would appear to represent emerging best practice in respect of CCS readiness – to which the Bank ought perhaps to have regard in its due diligence appraisal of future thermal power projects – rather than an existing requirement of EU environmental law which might inform the interpretation and application of obligations currently arising under PR 3 of the ESP. Therefore, the Compliance Review Expert determines that this aspect of the CCS assessment was adequate and, consequently, that the Bank is not in non-compliance in respect of this matter.

[167] *Supra*, n. 48, at 10, para. 12.
[168] *Ibid.*, at 12, para. 18.
[169] *Supra*, n. 53, at 15.

IV. CONCLUSION

73. On the basis of the above analysis the Compliance Review Expert has determined that the Bank has fulfilled its obligations under the ESP as regards oversight of the Client's assessment of the CCS readiness of the Šoštanj Project. The Client has conducted an adequate assessment of: the availability of storage sites for captured CO_2; of the economic feasibility of the CO_2 capture, transport and storage; of the technical feasibility of CO_2 capture and transport; and of the allocation of adequate space for carbon capture equipment at the Project site. The Bank's active involvement in ensuring adequate CCS readiness is readily apparent from the Terms of Reference provided by the Bank to the Client with a view to guiding the Client's consultants in conducting the assessment[170]. In addition to setting out the purpose of the CCS readiness assessment, in terms of both plant-level CCS readiness and regional/ national CCS readiness, the ToRs set out a detailed 'Scope of Work and Tasks' for both 'Location Feasibility' and 'Technological Feasibility'. The issue of economic feasibility, though not included as a separate heading, is also addressed at various points throughout the ToRs document.

74. The Compliance Review Expert has determined that the EU climate goals, with which the Complaint alleges a failure to comply, do not amount to a "relevant EU environmental requirement" for the purposes of PR 3.5. Therefore, they cannot comprise a requirement with which the Bank might be required to comply under the ESP. On this basis, the Compliance Review Expert has declined to examine this ground of complaint.

75. Therefore, the Compliance Review Expert has determined that the Bank was in compliance with the Relevant EBRD Policy pursuant to PCM RP 39.

[170] EBRD, *Terms of Reference for a Carbon Capture Storage (CCS) ready of the Sostanj Unit 6.*

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