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JI AND CDM: HYDROELECTRIC POWER PROJECTS OVER 20 MW

Guideline for Determination of Compliance with the Recommendations of the World Commission on Dams Regarding Hydroelectric Power Projects with a Capacity over 20 MW, within the Context of Joint Implementation (JI) and Clean Development Mechanism (CDM) Projects

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1. INTRODUCTION

The Project-based Mechanism Act (ProMechG) requires for approving hydroelectric power projects exceeding a capacity of 20 MW that the international criteria and guidelines, as outlined in Article 11b Para 6 of the Emissions Trading Directive (§3 para 1 p.2 ProMechG) be adhered to. The principles of the World Commission on Dams (WCD recommendations), issued in November 2000, are part of these international criteria and guidelines. Further relevant international criteria and guidelines are the standards of the World Bank and the OECD. As the WCD criteria provide the strictest sustainability standards, they include those of the World Bank and the OECD. The Kyoto Protocol and the Marrakech Resolutions make no specific provisions for hydroelectric power projects.

In order to supervise compliance with the WCD recommendations, DEHSt needs to base its decision on a report from accredited JI and CDM (AIE/DOE) entities. Derived from WCD-compliance report DEHSt will define in the Letter of Approval, whether compliance with planned mitigation and compensation measures should be assessed at the time of project verification. The criteria for the evaluation and the report to be submitted by the accredited entities are described in concrete terms in this guideline.

2. CORE VALUES OF THE WCD RECOMMENDATIONS

In November 2000, the World Commission on Dams published its final report, Dams and Development: A New Framework for Decision-Making, (also known as WCD Recommendations, www.dams.org). The report is intended to be the basis for the development, implementation, operation and evaluation of dam projects.

The WCD points out five core values that must be met when planning, carrying out and running dam projects. These values are equity, sustainability, efficiency, participatory decision-making and accountability. To ensure that these basic five criteria are complied with, the WCD Recommendations set out seven strategic priorities which, in turn, are specified in 26 guidelines.

These are the seven strategic priorities:

1. **Gaining Public Acceptance**
   Decision-making procedures must enable all parties concerned to be involved effectively, thus contributing to a verifiable acceptance of fundamental decisions. The rights of all groups concerned must be taken into account, especially those of indigenous and tribal peoples, women and other vulnerable groups.
2. **Comprehensive Options Assessment**
   In the assessment process, social and environmental aspects have the same significance as economic and financial factors. The options assessment process continues through all stages of project development, project implementation and project operations.
3. **Addressing Existing Dams**
   The use of existing dams must be optimised. Unsolved social and ecological problems concerning existing dams must be solved in a way the local population can accept. Dams are not static entities that remain unchanged over long periods of time. Existing dams must be adapted to new priorities in water usage.
4. **Sustaining Rivers and Livelihoods**
   Avoiding damage to the ecosystems of rivers by good site selection and planning of dam projects takes priority. Releasing appropriate environmental flows can help maintain downstream ecosystems and the communities that depend on them. Dams must be planned, modified and operated accordingly.

5. **Recognising Entitlements and Sharing Benefits**

   Joint negotiations with adversely affected people result in mutually agreed and legally enforceable mitigation and development provisions. These provisions recognise entitlements that improve livelihoods and quality of life, and affected people are beneficiaries of the project. Successful mitigation, protection of rights, supervised resettlement and development of livelihood are fundamental commitments and responsibilities of the State and the project developer.

6. **Ensuring Compliance**

   Governments, regulators, developers and operators must meet their commitments regarding the planning, implementation and operation of dams. Compliance with applicable regulations, with criteria and guidelines, and with project-specific negotiated agreements must be secured at all critical stages in project planning and implementation. In order to achieve this, clear criteria and guidelines that have been agreed upon by regulators, contracting parties and financial institutions must be monitored independently and transparently.

7. **Sharing Rivers for Peace, Development and Security**

   Where dams have transboundary effects, treaties must be negotiated that accommodate the interests of the states concerned. Agreements between governments must be made to ensure an equitable and appropriate use of resources and to prevent extensive damage. Provisions must also be made to inform partner states at an early stage. The strategic priorities set out by the commission must be adhered to. Dams on shared rivers are not built in cases where riparian States raise an objection that is upheld by an independent panel. Intractable disputes between countries are resolved through various means of dispute resolution including, in the last instance, the International Court of Justice.

The World Commission on Dams (WCD) identified five critical phases in the decision-making process in which the seven strategic priorities and their underlying principles should be applied. The first two of these sensitive project phases affect the planning stage - the choice of a preferred development plan (1. validating the needs for water and energy services, 2. the choice from other available options). Once the building of a dam has come out as the preferred option, the decision-making process runs through three further critical stages (3.project preparation, 4.project implementation, 5.project operation).

In Chapter 10, the WCD draws attention to the fact that the report as comprehensive guidance cannot be transposed to local circumstances without adjusting it to the situation. The report is subdivided into two parts, the first of which looks at existing dams and their social, ecological and economic impact. In its second part, Chapters seven to ten, a new approach to the decision-making process for large dam projects is developed on the basis of lessons learnt from the first part of the report. Chapter 8 focuses on targets, which means that the critical steps in decision-making are not addressed individually, but the project is reviewed at a given stage on the basis of the seven strategic priorities. Not only the achievements in project development are taken into account, but also the decision making procedures and the way in which way indigenous populations concerned were included in the process. Chapter 9, on the other hand, contains useful information for the project development, as it addresses the critical decision stages.

Chapter 8 of the WCD report ties in with JI and CDM approval procedures, since investor countries can only set out their requirements at defined stages of the project development, i.e. the initial assessment for approval and the verification stage. Accredited entities are also not in a position to follow a project through all stages, but only review the project at a fairly advanced stage. This is why DEHSt emphasizes the importance of Chapter 8 of the WCD recommendation in the context of JI and CDM approval procedures.

3. DETERMINATION OF PROJECTS ACCORDING TO WCD RECOMMENDATIONS

3.1. Application area of Article 11 b Para 6 of the Linking Directive

The European Linking Directive defines large hydroelectric power projects as power stations with a capacity above 20 MW. Other parameters such as the height of the retaining wall or the storage volume of the reservoir are not relevant. Thus, Article 11b Paragraph 6 applies to all hydroelectric power stations that exceed 20 MW. This includes run-of-river plants without retaining walls as well as power stations that have increased their capacity above the cut-off point of 20 MW. Several hydroelectric power stations along the same river are considered as one project, as their impact on the natural environment is cumulative, i.e. it will increase with every added dam. Should the total capacity of the hydropower installations exceed 20 MW, the WCD standards apply. Article 11 b paragraph 6 does not apply if the hydropower plants covered by a project design document (PDD) are not on the same river and there is no technical or ecological link between them, although their total capacity may well exceed 20 MW.

3.2. Requirements for the Determination Report on Compliance with WCD recommendations

The determination report on compliance with WCD recommendations is subject to the general UNFCCC requirements for accredited entities. Only those UNFCC-accredited entities are recognised that have been licensed for Sectoral Scope 1.

The robustness of statements made in the determination report must be substantiated by the following documents:

- Environmental Impact Study and approval from the relevant environment authority
- Documents relevant to the planning procedure
- Documents relevant to the option assessment
- Consultation plan or report

Where applicable:

- Expropriation and compensation plans, resettlement and development plans
- Financing plan for all social and ecological mitigations and compensations (could be included in the financing plan of the hydroelectric power project)
- Health and Safety action plan
- Natural and cultural heritage action plan
- Consultation plan for the inclusion of indigenous populations

Furthermore, point 4.2 of the guideline lists further documents that could be helpful in the determination process. It is also worth investigating whether reference emission data and other documentation from the PDD could be used in the discussion of point 2 of the Strategic Priorities (comprehensive assessment of all options) and point 3 (existing dams) of the WCD recommendations.

Documentation of the Environmental Impact

Every hydroelectric power station and every dam in particular has considerable effects on a vulnerable environment. The documentation of the environmental effects, as found in a PDD, does not provide sufficient material to allow an assessment of the environmental impact of such far-reaching projects. It is therefore mandatory for large hydroelectric power projects exceeding 20 MW that an environmental impact assessment (EIA) be carried out in order to take into account the many social knock-on effects.

In terms of the German Project-Based Mechanism Act (ProMechG), it is generally possible for the host country to carry out an EIA following their own legislation, as long as it is in line with international standards such as the Espoo convention of UN ECE, the European EIA Directive 97/11/EG and the relevant standards of the World Bank. Over and above these standards, the WCD recommendations also require an assessment of alternatives. This could be done within the framework of an EIA, although no provision is made for this in the above-mentioned international standards. However, projects that were developed following the World Bank standards have usually gone through the additional stage of alternative options assessment.

The report on compliance with WCD recommendations should include a quality assessment of the EIA.

All project-linked emissions are sufficiently covered by the PDD specifications laid out by the UNFCCC. No additional documentation is required.

Point of time for the Approval Application

The WCD recommendations identify five critical stages in the decision-making process in which the seven strategic priorities and their underlying principles should be applied.

The first two stages (1. validating the needs for water and energy services, 2.choice from available options) happen before the basic decision, i.e. the choice of the best development option, is taken. In this stage the investor country is not able to ensure that WCD recommendations are adhered to. Thus, DEHSt could at these stages issue a Letter of Endorsement based on the outlines of the project and an approximate forecast of the environmental, social and cultural effects of the project. If applicable, more documentation on the consultation of the population concerned is required.

The elegibility of projects that have reached project phases 3 (project preparation), 4 (implementation) or 5 (operation) could be approved by Germany as an investor state.

3.2.1. Structure of the Determination Report on Compliance with WCD Recommendations

The structure of the report on compliance with WCD recommendations should be modelled on Chapter 8 of the recommendations. What is expected is a general introduction to the project as well as a qualitative analysis of the documents the report refers to. The structure of the main part of the report must follow the seven strategic priorities and their underlying principles. Each of the priorities must be validated individually. Their shortcomings must be pinpointed and possible solutions indicated. During the assessment, possible flaws and questions arising should be pointed out to project managers who may be able to find short-term solutions. For the remaining problems, a time schedule should be developed for when they can be solved, if at all. A statement is needed in particular where compensation measures are envisaged. In order to give some idea of the enforceability of the measures, it must be clear who is responsible for their implementation and what the financial framework is. Contracts between public institutions and project developers or a legislative framework could be relevant in this context.

Finally, the whole project needs to be evaluated, taking into account all seven strategic priorities. Amongst other things, flaws must be pointed out, as DEHSt must decide whether at the time of project verification, compliance with planned mitigation and compensation measures should be assessed.

3.2.2. Chapter 8 of the WCD Recommendations

Chapter 8 of the WCD recommendations is available as a pdf at http://www.dams.org/docs/report/wcdch8.pdf.

4. MORE DETAIL ON SPECIFIC TOPICS

4.1. Crucial Issues

In the following, the WCD rules for the most labour-intensive and controversial aspects of determining a hydropower project are explained.

Alternative Options and Selection of Site

The WCD is calling for an economically viable and verifiable process for the validation of the energy needs, costs and benefits, the need for relocation of communities and disruptions likely to be caused to the natural environment. Where water management does not only involve the production of electricity, but also irrigation or flood protection, the selection of a site and possible project alternatives becomes particularly complex. As far as the mere production of electricity is concerned, a least-cost expansion plan is a minimum requirement.

⇨ A more comprehensive EIA includes documentation of alternative projects and site selection. It is, however, possible to motivate the chosen alternative elsewhere in the documentation.

Inclusion of Stakeholders and Gaining Public Acceptance

One of the key demands made by WCD is the inclusion of stakeholders and gaining public acceptance. The commission believes that democratic principles must be applied to rational project planning, which means that all stakeholders and their representatives must be included in the decision-making process. Project managers and authorities should engage in regular negotiation to address questions arising. Indigenous populations and other economically and politically vulnerable groups are of particular importance.

⇨ Reports or statements by regional authorities and non-government organisations (NGOs) with local knowledge are consulted to validate the consultation process.

⇨ Stakeholders must be consulted within the framework of an environmental impact assessment. The EIA report should therefore include such documentation

Resettlement

One of the major problems associated with the building of dams, especially those with large reservoirs, is compulsory resettlement, expropriation, compensation and re-establishing the livelihoods of the people affected. It must therefore be established whether settlements, buildings, transit routes or economic resources such as woodland, arable land or pastures will be damaged or lost.

- ⇨ If land is going to be lost, the question of land replacement must be raised, as land-for-land compensation is the preferred option, according to WCD and World Bank criteria.
- ⇨ If resettlement has not yet taken place, a resettlement plan must be developed. A general set of rules provided by the state could be helpful.
- ⇨ Where resettlement is considered, the question whether the people affected can be easily integrated into the new region must be assessed. This includes looking at language, dialect, knowledge of use of land, acceptance of traditions and habits.

Ecological and Econonic Drawbacks

Apart from the actual losses through flooding that are inevitable in dam-building projects, there are a number of negative economic effects, nearly always associated with changes in the discharge regime.

When water is diverted towards the power station through tunnels or canals, parts of river beds dry up. Even where a minimum discharge remains through natural conditions or legal provisions, water usage is often affected, especially irrigation, drinking water, fishing, tourism etc. Building dams disrupts the natural water equilibrium of a river valley, affecting wetlands and ground water-dependent usage. Some of these effects can be balanced out by simple technical measures, e.g. digging wells for drinking water. Other effects, however, are more difficult to compensate, e.g. if gravity irrigation cannot function any longer. Even if the water is redirected into the river bed after use, changes in the discharge and bedload regimes, affecting diurnal or even seasonal variation, could have significant economic repercussions. The effects could be felt downstream right down to the estuary. Reduced bed load will make the river sink deeper and make surrounding ground water levels fall.

- ⇨ The wider-ranging effects of the project at the site, upstream and downstream must be evaluated.
- ⇨ It must be established whether relevant local climate changes as well as shifts in biodiversity directly associated with the dam project have been documented within the EIA framework.

Water Usage

If a reservoir is used not only for power generation, but also for irrigation, the annual discharge will be reduced, with disadvantages for the downstream population. Reducing the discharge (possibly combined with salination) has far-reaching consequences, in particular where water is also used for irrigation downstream of the planned power station.

- ⇨ It must be established to what extent water usage affects discharge volume.

Water Quality

Newly established reservoirs often struggle with unforeseen water quality problems, such as eutrophication, diminishing oxygen content, salination, as well as the transition towards a nutrient-tolerant and still-water- adapted flora and fauna, the disappearance of migrant fish etc. While the quality of water has little effect on the use of hydropower, it has repercussions on drinking and irrigation water supplies as well on the fishing and tourism industry upstream and downstream. If in certain river sections and at certain times the discharge is dramatically reduced, it affects water quality accordingly, if only by the reduced dilution of wastewater.

- ⇨ Forecasts about the further development of water quality and its social and economic implications are indispensable.

Ensuring Compliance with Commitments and Agreements

Compliance with commitments and agreements is an integral part of the WCD recommendations. In order to prevent flaws in the implementation of the project, the obligations of authorities and investors should be laid down in a legally binding way - through treaties, administrative acts and other safeguards. Thus, in monitoring compliance with WCD recommendations, it is of paramount importance that the complete documentation of the financing of compensation and mitigation measures is included.

⇨ Appropriate measures must be in place to ensure compliance with commitments and agreements. Responsibilities as well as the financing of all social and environmental compensation and mitigation schemes must be well documented. This does not require any specific document, but should be evident from the overall documentation.

Inclusion of Local, Upstream and Downstream Residents Across National Borders

Where the effects of a hydropower project extend beyond national borders WCD regulations require a formal procedure of informing upstream, neighbouring and especially downstream states and assessing possible effects. This is a first step to be taken by the project managers. What follows are negotiations between project managers and the states concerned in order to reach a consent or, if the differences remain – to seek mediation. Consultation with affected states is usually time-consuming and does not always yield clear decisions. The circle of stakeholders in the project becomes wider. It is advisable to establish some form of institutionalised cooperation, e.g. a river basin commission.

Evidence of consultation with up and downstream states along the WCD guidelines can only come from the host country government. Verifiers can only document the situation as far as publicly accessible sources will allow.

4.2. Key Documents and Basic Information

A host of data is created during the planning and development of power stations, many of which do not enter the application documentation, but can be helpful when assessing the impact of the project. It is therefore recommended to look at the following documents or data:

- Technical specifications of dam, reservoir, power station, tunnel and ancillary installations (not just the abridged version)
- Natural and economic geography descriptions of the project area
- Purpose of the installation: Only power generation or also irrigation, discharge regulation, drinking water reservoir, water usage etc.
- Legal framework: Environmental and planning permission procedures may include statements about the involvement of the people concerned. Country-specific legislation may provide guidelines for expropriation and compensation procedures.

- Legal requirements for water protection may include statements about the safety of the dams, perhaps even safety analysis documents.
- Feasibility studies may contain a chapter about the ecological and social impact, thus perhaps partially substantiating the selection of the project as best option.
- Statutory laws on the protection and recognition of minorities may give valuable hints on how to respect the rights of minorities.
- If internationally operating banks are involved in a project, they may have additional documentation on risk, impact and compensation (see also section 4.3).
- The energy supply strategy or even the sustainability strategy documentation of the host country may contain a description of the overall function of the hydropower project.
- If the project has a transboundary impact, bilateral agreements on the environment or other relevant agreements may help use the existing cooperation between the two countries.

4.3. Significance of the World Bank Standards in regard to the Determination of the WCD compliance

Some JI or CDM hydroelectric power projects are co-financed by internationally operating banks, the International Finance Corporation (IFC) or the International Bank for Reconstruction and Development (IBRD), which have signed up to the World Bank Standards. Furthermore, trade credit insurers in OECD countries require projects to be audited according to World Bank Standards. The most widely used criteria are the Performance Standards on Social and Environmental Sustainability of the IFC or the comparable IBRD safeguard policies. These sets of rules comply with most of the WCD recommendations, especially referring to

- The assessment and mitigation of the environmental impact
- The inclusion of all stakeholders and mitigation or compensation for detrimental economic effects
- The thorough and comprehensive assessment of all effects
- Constructive negotiations with downstream states on transboundary rivers
- Informing and hearing to stakeholders

The first two WCD Strategic Priorities are more ambitious than the World Bank

- "Gaining Public Acceptance" goes beyond informing and hearing to stakeholders, but demands ongoing negotiations with all stakeholder groups.
- In "Comprehensive Options Assessment" the WCD favours a more comprehensive and more participatory approach than the World Bank.

The WCD decision procedure gives the state a less prominent role compared to the World Bank Standards. Thus, verifiers can refer to World Bank Standards in their monitoring reports, but should also evaluate projects according to WCD requirements where these go beyond IFC standards.

5. SUMMARY

This guideline concretises and operationalises the legal requirements for the determination and approving of large JI and CDM hydroelectric power projects. The requirements laid out in the guideline must be followed. The determination report about compliance with WCD recommendations, issued by the accredited entity, is used as basis for the decision on the approval granted by the DEHSt, according to paragraphs 3 and 8 of ProMechG.

There are no plans to go beyond what is laid down in the guideline. No compulsory determination report format is being envisaged. After a pilot period of approximately two years, the guidelines will be reviewed. Amendments and updates, based on new insights and changes within the legal framework can be expected during the pilot phase.