Mekong River Commission

P.O. Box 6101, 184 Fa Ngoum Road, Unit 18,
Ban Sithane Neua, Sikhottabong District, Vientiane 01000, Lao PDR
Telephone: (856-21) 263 263. Facsimile: (856-21) 263 264

31 October 2009

Subject: RECORD OF MEETING

Dissemination of MRC's Preliminary Design Guidance for Proposed Mainstream Dams in the Lower Mekong Basin

Meeting venue: Vientiane, 20 October 2009

1. General

In September 2009, the Mekong River Commission (MRC) Joint Committee authorized the circulation of the Preliminary Design Guidance (PDG) for proposed mainstream dams in the Lower Mekong Basin (LMB). This document was subsequently provided to the National Mekong Committee Secretariats (NMCS) and the line agencies of the four Member States, and to the developers of the proposed mainstream developments. The PDG was also posted on the Mekong River Commission Secretariat (MRCS) website. This step was taken to ensure that all stakeholders and their representatives had equal access to information and to ensure transparency, with regard to the MRC role.

The purpose of the dialogue meeting on 20 October was to openly discuss the PDG and enable the line-agencies and developers to pose questions, or to request clarification on the specific content of the PDG and its application in their project preparation activities. It was emphasized that the MRC guidance is preliminary in nature and advisory. The PDG has legal effect only to the extent that individual Member States require developers to conform to the guidance under their national regulatory frameworks and planning systems.

The guidance will nevertheless form one basis for MRC support to Member States when the Procedures under the 1995 Mekong Agreement are triggered to assess individual mainstream dam proposals, especially in terms of the Procedures for Notification, Prior Consultation and Agreement (PNPCA). The MRC Secretariat's role in implementing the PNPCA is to assist the MRC Joint Committee in facilitating national-based reviews and assessments by providing relevant MRC Programme data, analysis and outputs, technical advice and supporting the multi-stakeholder participatory arrangements - as appropriate in each country.

As such the PDG is only one element of MRC support to Member States in the process of considering proposed mainstream hydropower developments in a consistent manner.

Annex 1 of this Record of Meeting provides the Agenda for the 20 October 2009 meeting. Annex 2 provides the list of participants. In total over 80 persons attended.

This Record covers the main discussion, questions and responses on the six sections of the PDG document, namely:

Section 1: Purpose of the Guidance
Section 2: Navigation
Section 3: Fish Passage
Section 4: Sediment Transport and River Morphology
Section 5: Water Quality and Aquatic Ecology
Section 6: Safety of Dams

Presentations made by MRCS staff to initiate discussion on individual sections can be downloaded in PDF format at http://www.mrcmekong.org/ish/design-guidance.htm

2. Summary of Questions and Responses

Section 1: Purpose of the Preliminary Guidance

The content of the first section of the PDG was mentioned in the opening remarks of the Chief Executive Officer (CEO) of the MRCS. Among the key aspects were:

- The preliminary design guidance (PDG) is provided in the form of performance targets, design and operating principles for mitigation measures, as well as compliance monitoring and adaptive management.

  Two broader aims are:

  i. To ensure that developers (and line agencies) have timely guidance in order to adopt a consistent approach to the design of the proposed individual dams, as well as the proposed mitigation and management measures, including aspects where the proposed developments have significant trans-boundary impacts, and;

  ii. To provide developers the flexibility to identify and propose the best solutions and the scope to innovate by offering performance targets.

- The guidance is founded on basic Integrated Water Resource Management (IWRM) principles, international best practice and relevant primary legislation of Member States, namely: avoidance over mitigation; water as an economic good; adaptive management; and good practice and safe operations.

- The CEO also mentioned in the opening remarks that:

  i. The MRC is conducting a Strategic Environment Assessment (SEA) of proposed mainstream hydropower developments in collaboration with the National Mekong Committee Secretariats (NMCS), relevant line agencies, civil society and other stakeholders. The SEA focuses on an assessment of the development opportunities

and risks of the proposed mainstream dams and the regional distribution aspects. The SEA will offer an assessment framework that Member Countries can use to evaluate individual proposed dams that are part of a possible cascade, where there are interactive and cumulative impacts to consider, as well as contributing to the assessment of integrated management approaches if more than one dam were to proceed. Information on the SEA and its status is available on the MRC website. [1]

ii. The SEA will feed information into MRC's wider Basin Development Plan process, which responds to Article 2 of the 1995 Mekong Agreement (as indicated in the final two background presentations in the afternoon session).

iii. Under the Initiative on Sustainable Hydropower (ISH) and the MRC Environment Programme (EP) the MRCS is also trialing adoption of a hydropower sustainability assessment protocol (SAP) developed by the International Hydropower Association. This SAP was developed in a multi-stakeholder process and is currently undergoing trials in different regions of the world including the Mekong and China. [2] Separate briefings will be provided by MRCS on the SAP application in the Mekong in future both for tributary dams and proposed mainstream dams and for all scales of hydropower.

After short presentations by MRCS staff introducing each section of the PDG (e.g. what is the rationale and basis of the guidance offered, how does it link to the 1995 Mekong Agreement, how was it derived, and what are the key elements) the following questions and answers were provided. The questions are not necessarily in order.

Section 2: Navigation

Question 1-1: Who will optimize the proposed cascade of dams in Lao PDR? What role does MRC play in the design optimization of dam heights and water levels as regard to navigation?

Response:

- *The Department of Electricity (DoE), Ministry of Energy and Mines Lao PDR undertook the optimization study of five proposed mainstream dams in the LMB above Vientiane. The DoE engaged the technical resources of the Compagnie Nationale du Rhone (CNR, France), which has the concession to design and operate hydropower dams with navigation locks on the Rhone.*
- *The MRC Programmes were consulted for hydrology data including the modeling of the influence of the upstream Chinese dams on water levels in the Lower Mekong system, and to obtain other technical information such as river cross sections and profiles.*

[1] http://www.mrcmekong.org/ish/SEA.htm
[2] http://www.hydropower.org/sustainable_hydropower/HSAF.html

- *It is important to note that navigation should not be seen as a driving force for the proposed mainstream dam developments. What is important is that navigation considerations are incorporate from the start of the conceptualization of any proposed mainstream dams and included in the project preparation / design process.*
- *In this respect, MRC's preliminary guidance on navigation locks responds to Article 9 of the 1995 Mekong Agreement to ensure freedom of navigation.*

Question 1-2: Why should the navigation lock size be the same for all proposed mainstream dams, given there are different conditions in each stretch of the river?

Response:

- *From the navigation point of view, standardization of lock designs for the proposed mainstream dams is required to ensure transit of similar vessels, consistent performance of lock operation, and to ensure that an adequate water depth is guaranteed over the river stretch.*

Question 1-3: Why should developers make provision for a parallel (double) lock for future expansion of river traffic?

- *Because large dams are regarded as permanent infrastructure, the PDG proposes that developers reserve an expansion slot for another lock (parallel arrangement) that may be built in future, in case this is needed to accommodate future increases in vessel traffic demands for trade, tourism and other future purposes.*
- *The second lock will not be built from the start; only the space has to be reserved. This imposes little or no additional project cost on the developers at this time.*
- *Consideration should be made for increased traffic in case agreement between the Mekong countries increases river transport opportunities.*
- *Moreover, Member States do not want to take decisions today, which may be regretted in future, whether it is lock sizes, expansion slots or related infrastructure such as bridge clearances. Provision of sustainable infrastructure, by definition, requires leaving future generations the choice to optimize the use and benefits of the infrastructure.*
- *Would the development of dams induce improvement of waterborne transport and trade?*
- *One point of reference is Europe, where all inland waterways, rivers and canals are now fully utilized and roads are congested. While today there is high traffic on waterways in Europe, they are constrained in further expansion by lock size and bridge clearances that were decided some 30 years ago when the importance of navigation was neglected and the impacts of increased road traffic were unknown. Waterborne transportation is much*

cheaper and environmentally friendly, especially if the cargos are taken in large volumes.

Question 1-4: Will there be a fee for using a ship lock? Can the developer count on that as revenue?

Response:

- *The question of whether any fees are to be levied for vessel transit and the level of any such fees are policy matters for Member States to decide at the appropriate time, both with reference to the 1995 Mekong Agreement and regional and international practice.*
- *One international example is the Rhone River Basin in France. The Compagnie Nationale du Rhone (CNR) of France received concession rights to build and operate 11 run-off-river power plants on the Rhone. One of the concession conditions was that the CNR ensures freedom of navigation.*
- *CNR also has the responsibility to facilitate waterborne transportation along the river. This includes capital and maintenance dredging works, conducting regular hydrographic surveys and mapping, installing and maintaining aids to navigation, and maintaining the ship locks to the highest standards.*
- *Another condition was that no fee could be charged for all of these works. However, this was within one country.*

Question 1-5: Who or what body will coordinate or control the operating water levels of the proposed mainstream dams? Will it be the MRC?

Response:

- *Member States would likely discuss this important institutional issue at an appropriate time, particularly if two or more mainstream developments were to proceed.*
- *If the situation arises where there are different operators, ultimately there needs to be an overall body responsible for coordinating the operation of the dams/navigation locks. Referring to international practices, operating ship locks in coordination with the other dam/lock systems is complex and the institutional set-up should be planned very carefully.*
- *It is not clear at this stage whether it would be a national body or inter-governmental regional body such as the MRC.*
- *The MRC NP Phase 2 study on Standard Specifications for Construction and Operation of Navigation Locks will prepare a Concept Note on coordination of the ship locks and the requirements for operating water levels for shipping.*

- *Taking the example of the Rhone River in France again, in the concession agreement, (CNR) agreed from the start to operate the dams and the locks, leaving an optimal balance which allows sufficient flow for power and transport as well as for irrigation and other agriculture uses.*
- *For navigation it is important to ensure sufficient flow at all times and guaranteed minimum water depth.*

Question 1-6: After its optimization study the Lao PDR Government adjusted the full supply level for Pak Beng so that the backwater will not overflow Keng Pha Dai in Thailand. This means less there is water for navigation in that stretch of the river above the proposed dam. Can a higher dam be justified for navigation?

Response:

- *Each government is responsible for the proposed design of dams in its jurisdiction.*
- *Under the MRC's PNPCA procedures all Member State will consider individual project proposals with a view to the MRC Joint Committee reaching an agreement about the major features of the proposed projects, within the prescribed procedures.*

Question 1-7: The recommended transit time through a lock of one chamber is 30 minutes. Can this be extended to 45 minutes?

Response:

- *In the MRC NP Phase 2 study on Standard Specifications for Construction and Operation of Navigation Locks, the NP will look at this suggestion.*
- *The MRCS NAP team has proposed that navigation experts from China would cooperate in this study.*

Section 3: <u>Fish Passage</u>

Question 3-1: Why should fish passways be designed to be fully operational (functional) from a minimum low season flow up to the 1:20 flow level. Why not use a 1:3 return period as a design criteria or some lower flood return period?

Response:

- *The 1:20 return period is common in international practice. The purpose is to extend the operation of the fish passage over a reasonable range of operating conditions.*

- *The flood pulse is a significant trigger for migration. It is therefore important to optimize and ensure fish passage in times of flood.*

Question 3-2: Why provide downstream fish passage if fish can pass through turbines (Kaplan with a minimum of blades) and over spillways?

Response:

- *Fish migration in the Mekong is complex and occurs throughout the year. Fishways are needed for both upstream and downstream migration.*
- *There are long periods when the spillways of the proposed mainstream dams would not operate. At that time most flow is through the turbines and bottom flow outlets for sediment sluicing.*
- *There are other factors, for example, spillways flows do not always attract downstream migrating fish and behavior tends to be species specific. Power turbines (even Kaplan turbines for low head dams that may have only 6 blades – or fewer) have varying degrees of fish mortality, which increases significantly for larger fish.*
- *The major factor is the overwhelming rate of biomass passage in the Mekong both upstream and downstream. This requires maximum use of all feasible techniques to meet the fish passage targets.*

Question 3-3: Why should a project like Pak Beng, the upper most dam in the proposed cascade sequence, make the investment in fish passages if fish passage measures in the dams lower in the cascade are not effective?

Response:

- *It is not known at this stage which of the proposed mainstream developments, if any, will proceed to implementation.*
- *Therefore, at the feasibility stage all the developers need to consider the fish passage aspects of their proposed design in terms of (i) a single dam, as well as (ii) a dam in a potential cascade sequence.*
- *Similarly, it is not known in what sequence any of the 11 or more projects would be built, if more than two projects were eventually accepted. For example, there may be several years or more time between the first and any additional dam developments on the mainstream.*
- *It is therefore important that all proposed dams are designed to maximize fish passage as provided in the PDG, taking into account the site-specific conditions.*

Question 3.4: Why should developers be responsible for proposing mitigation options for fish loss as one element of the compensation programmes for lost fisheries resources?

Response:

- *It is common practice in national EIA procedures (in the Mekong as elsewhere in the world) to propose avoidance, mitigation and enhancement measures for the anticipated impacts of the proposed dam.*
- *This is required by laws in most, if not all countries, for both the construction and operation phases of a project.*
- *This assessment would be prepared by the developers who are legally responsible for the EIA and the environment mitigation and monitoring programmes (EMMP) for construction and operation phases. These will be reviewed and considered in national regulatory systems.*
- *It is also recognized by everyone that in the Mekong context, there is potential for significant transboundary fisheries impacts. Also, that at present there is no explicit mechanism for transboundary impact mitigation and compensation.*
- *In this respect, the findings of the EIA and the provisions of the EMMP with respect to fisheries impact avoidance, mitigation and enhancement measures will be considered in the MRC PNPCA process with a view to the MRC Joint Committee reaching agreement.*

Question 3.5: Why should developers set aside contingency funds for the potential modification of the fishway facilities in the amount of 20 percent of the initial cost of building the fishways?

Response:

- *This is a guideline figure for the contingency fund that should be replenished as it is drawn down, to ensure that funds are always available for modification works.*
- *The basis is international experience where fish passage modifications are often needed to improve the functionality of fish passages, based on monitoring and adaptive management.*
- *It recognizes also the central importance of maximizing the effectiveness of fish passage and related mitigation with respect to any proposed Mekong mainstream dam, and well as the level of uncertainty and scientific information on these issues that is available at this time.*

Question 3.6: Why not cancel the requirement to provide passage for migratory fish and focus on breeding stations and aquaculture instead?

Response:

- *Beyond looking at measures to optimize upstream and downstream fish passage, the developer EIA would normally assess the extent to which all mitigation options (such as aquaculture and breeding programs) can mitigate the expected impact on fisheries resources in terms of nutrition and livelihood income, as well as other relevant factors.*
- *That assessment must take into account all the factors including the numbers of families impacted, access to land, time required to develop the alternatives, what to do in the interim, what to do if the proposed alternatives fail to deliver results, the budget required, and so forth.*
- *The PDG calls for maximizing the effectiveness and performance to pass a proportion of target species both upstream and downstream to ensure continued fish abundance or population viability. This success rate is to be established by the developer, based on its life history and the number of dams the species may have to pass to complete their life-cycle.*
- *As the PDG states, the movement of fish past the dam barrier may be possible only if effective fishways can be designed to accommodate the biology and numbers of migratory fish in the Mekong. Therefore different technical options for fish passage upstream and downstream need to be considered by developers for the range of species, volume of migrations and flow conditions encountered at a dam site. The developer is thus encouraged to evaluate and propose the most effective fish passage measures.*
- *As provided in the PDG, if fish passage rates are unlikely to be adequate to maintain viable fish populations, the PDG calls for developers to propose mitigation options and propose other measures as one element of compensation programs for the estimated lost in fisheries resource.*
- *In this respect developers are encouraged to include proposals for all feasible mitigation options, including aquaculture and breeding stations as part of a package of measures. An essential question developers need to address is the extent to which the proposed combination of alternative measures will mitigate the scale of impacts that are expected, and what level of compensation remains to be considered.*
- *Ultimately the national government processes will decide on the mitigation and compensation options proposed by developers. Similarly, in the PNPCA process the Member States will subsequently consider what is proposed for mitigation and compensation from a transboundary or regional perspective, with a view to the MRC Joint Committee reaching agreement.*

Other: There were seven questions on different aspects of the PDG on fish passage that one developer representative undertook to provide to the MRCS in writing. In general the comments indicated that the developer felt the performance targets the PDG offered were set too high.

Response:

- *The MRCS would be pleased to respond to any questions. The response would involve the concerned NMCS and Line Agencies appropriately.*

Section 4: Sediment Transport and River Morphology

Discussion: There were no substantive questions on this section.

- One question about how downstream sediment flushing releases can be accommodated in localized environment flow releases is addressed in response in Section 5.
- As noted in the presentation, there was a discussion that developers should design proposed mainstream dams to pass fine suspended sediment and coarse bedload material in a way that most closely mimics the natural timing of sediment transport dynamics in the river. This requires consideration of all techniques for sediment passage.
- Broader points were also made on the need to establish an institutional coordination mechanism for sediment flow management through a potential cascade of dams, which links to the operating policies of the dams.

Section 5: **Water Quality and Aquatic Ecology**

Question 5-1: In the triangle presented on the integration of the three performance targets (water quality, aquatic ecology and environment flows) where does flushing releases of bedload sediment from the reservoir through bottom flow outlets or suspended sediment over the spillway fit in? Should the sediment issue be inserted as a fourth angle?

Response:

- *We recognize there is a relationship between sediment transport and other performance target indicators (water quality, aquatic ecology and environmental flow), and the guidance to incorporate sediment monitoring into a comprehensive environmental monitoring and management plan as a requirement.*
- *The PDG otherwise calls for environmental friendly practices for sluicing and flushing of sediment, in particular where the sediment concentration of water released during flushing operations should be controlled and monitored to prevent negative impacts on downstream ecology (e.g. high sediment concentrations can lead to fish mortality and smothering of spawning areas).*

- *As noted in the guidance, in the environment flow assessment an integrated approach should be used that takes into account the combined effect and coordination of water releases for electricity generation (i.e., turbine releases) sediment management (i.e., flushing, density current venting, etc. through low level outlets or partially open spillway gates), and water through fishways, as well as the relative dominance or influence of spillway releases on downstream conditions.*
- *These downstream conditions include all human and natural system river uses including those for navigation, cultural values, tourism and abstraction for water supply or irrigation, as well as localized impacts on river bank erosion and river morphology.*
- *The approach needs to be practical. And given these are run-of-river projects with limited active storage (and some degree of daily regulation) the localized effects downstream are stressed in the PDG.*
- *In addition, developers should pay special attention to the possible impact of rapid fluctuations in water levels due to any daily releases for peak generation and the ramping rates (hourly rate of change in releases, which in peaking operations, depends on how many generation units are brought on line at once, and how quickly).*
- *Releases via the turbines and the spillway gates need to be ramped so change in water surface downstream (and upstream) is sufficiently slow to minimize adverse effects on downstream river bank stability and does not pose a public safety hazard.*
- *The monitoring program should otherwise ensure the environmental flow considerations are adequately reflected in the operating policies for the reservoir and sediment management strategy.*

Section 6: **Safety of Dams**

Question 6-1: Why does the MRC want developers to adopt guidance contained in the World Bank Operational Policy 4.37 on the Safety of Dams and technical bulletins of the International Committee on Large Dams (ICOLD), when Lao PDR has standards?

Response:

- *The PDG calls for developers to use and apply (i) relevant national standards that impact on different aspects of dam safety (ii) international best practice, as embodied the World Bank Operational Policy 4.37 on the Safety of Dams; and (iii) the periodic technical bulletins on the safety of dams issued by the International Commission on Large Dams (ICOLD) through the ICOLD Committee on Dam Safety (CODS).*
- *The Lao PDR standards cover some aspects of dam safety such as flood return periods for spillway design for different categories of dams.*

- *However, the broader philosophy today is safe design, construction and operation of dams depends on more than structural design and engineering factors. The approach to dam safety must recognize that the failure of a dam is a complex process that can include human error in design, construction and operation, maintenance and monitoring stages.*
- *A systematic approach and management framework that accounts for the complexities of operation of dams is fundamental to achieving and assuring dam safety.*
- *The combination of national standards and World Bank and ICOLD guidance assures that best practice is consistently followed by all developers. This approach is more acceptable to all stakeholders including governments, civil society and the general public. This issue is often raised by stakeholders in the consultation processes around the MRC Strategic Environment Assessment (SEA) of the proposed mainstream dams.*
- *It recognizes the safety operation of any mainstream dam (or a cascade) is of primary importance to all four Member States. Linking to the World Bank and ICOLD guidance provides and opportunity to reassure the public and provide regular updates not only for design but also for the implementation and operation stages.*
- *Article 7 of the Mekong Agreement, which refers to the prevention and cessation of harmful effects makes ensuring the safety of dams obligatory.*
- *Most developers in the region are familiar with the World Bank Operational Policy 4.37 on the Safety of Dams as well as ICOLD Guidance. Many national representatives from the Mekong, for example, participate on the ICOLD committees.*

Question 6-2: When do these assessments related to the safety of dams need to be done?

Response:

- *This aspect is clearly set out in the guidance offered by the World Bank and ICOLD. Different measures are required at each stage of the project cycle from design and feasibility to implementation and operation. Planning for the measures needs to start at feasibility and more detail provided at detailed design.*
- *Among the plans and mechanisms that developers / owners must put in place include:*
    i. *An independent Dam Safety Panel of Experts (POE) - Reviews by the POE of investigation, design and construction of the dam and start of operations;*
    ii. *A construction supervision and quality assurance plan;*

iii. *An instrument plan, to monitor and record dam behavior and related hydro meteorological, structural and seismic factors*

iv. *An operation and maintenance (O&M) plan, also with long-term maintenance and safety inspections; and*

v. *An emergency preparedness plan. The plan itself is prepared during implementation and is provided to the panel for review not later than one year before the projected initial filling of the reservoir.*

- *The guidance offered by the ICOLD and the World Bank provides details on what is needed when. The guidance also describes the safety management systems approach that is required to be introduced at detailed design stage.*

Question 6.3: At this stage in preparing the mainstream dam proposals (now) should the dam safety issue be part of the feasibility study or the EIA?

Response:

- *Normally the dam safety is part of the feasibility study work including aspects such as design for seismic risk and flood risk. Dam safety issues can also be handled as a supplemental assessment linked to the feasibility and EIA/SIA study work.*
- *The important aspect for the developer feasibility study stage work is:*

i. *to apply the guidance on the key structural design parameters, such as spillway capacities,*

ii. *to indicate clearly that the guidance as embodied in the technical bulletins of the International Commission on Large Dams (ICOLD) and in the World Bank Operational Policy (OP/BP 4.37) on the Safety of Dams will be applied in detailed design, construction and operation phases, and*

iii. *to make adequate provision for all these aspects in the project cost estimates at feasibility stage.*

Discussion: One further point of discussion was paragraph 185 in the PDG where the responsibilities for dam break analysis of the whole proposed cascade of dams needs to be clarified. This would entail coordination with the main institutional actors including the NMCS, concerned line agencies and the MRCS.

3. Other general questions and discussion

Question G-1: If a developer adopts the MRC preliminary design guidance fully, what can the MRC offer in return to indicate concrete support for the project?

Response:

- *The guidance that the MRC offers on the proposed mainstream dams is to facilitate conformance with the 1995 Mekong Agreement.*
- *The MRCS itself is a technical secretariat reporting to the Joint Committee consisting of the four Member States. Under the Mekong Agreement the MRC Joint Committee is the mechanism to reach agreement on how any proposed mainstream dam is viewed.*
- *It is important also to reinforce the fact that the guidance is only advisory. When the Joint Committee meets to discuss any notified project it may include other considerations.*
- *In this respect the PDG is only one element of the MRC Programme work in all sectors that will be taken into account by national and MRC procedures when considering mainstream proposals (e.g. the MRC Basin Development Plan, Fisheries and Navigation Programmes, and the Initiatives on Sustainable Hydropower and Climate Change Adaptation, etc.).*

Question G-2: The developers proposed to take parallel steps to advance the mainstream proposals working with the MRC, the line agencies and prospective purchasers. What is the MRCS position on this approach?

Response:

- *The two important issues are (i) the developers' approach and planning process must take into account the need to fully implement the MRC procedures, and (ii) the identification by countries of how this guidance fits into their own regulatory procedures.*
- *This is related to the issue of signing MOUs, Project Development Agreements (PDAs) and Concession Agreements (CAs); for example, in the case of Lao PDR, the PNPCA is complete prior to the issuance of environmental clearance or the PDA.*
- *Also as noted in the PDG Section 1, it is important to build flexibility into the Concession Agreement (CA) and Power Purchase Agreements, in particular, to facilitate and enable adaptive management of the assets over time based on monitoring outcomes.*
- *Otherwise, it is expected that any parallel steps developers take to advance completion of their project proposals are consistent with the regulatory framework of the respective national governments and their specific MOU or Letter of Agreement.*

Question G-3: Will the MRCS provide all the supporting documents that are referred to in the Preliminary Design Guidance.

Response:

- *The PDG indicates where background and reference material cited can be obtained, either from the MRCS or websites.*
- *It is important to understand that the responsibility for accessing information lies with the developers. For example, the section on the safety of dams specifically states that:*
    - *Developers and owner/operators should be responsible to check for periodic updates of the World Bank Operational Policy (OD/GP 4.37) as well as updates, or new technical bulletins on the Safety of Dams issued by the International Commission on Large Dams (ICOLD). At minimum, this check for updates should be routinely done in preparation of the annual Dam Safety report.*

Question G-4: Will the MRC preliminary design guidance be updated?

Response:

- *There are no immediate plans to update the guidance in the coming year.*
- *An update may be envisaged (i) in response to the questions that have been raised in this meeting and those raised subsequently, and (ii) as more information becomes available from the key studies that MRC Programmes / and Initiatives have currently underway and that have direct relevance to the PDG.*
- *For example, such studies and programme activities include: the SEA of proposed mainstream dams; the BDP scenario assessment; the Fisheries Programme (FP) larvae studies; the sediment modeling and monitoring under the MRC IKMP Programme, and; the Navigation Programmes (NP) Phase II study of standardized lock designs. Much of this will be available in next 6-12 months.*
- *Also, consideration may be given to extending the guidance to proposed hydropower projects on significant tributaries, which will encompass a range of different issues characteristic of storage projects.*
- *The MRC Joint Committee will decide if and when an update of the PDG is to be undertaken.*

4. Background Information

In the afternoon session two presentations were made to illustrate the relationship of the preliminary design guidance (PDG) of the proposed LMB mainstream dams with the wider strategic planning context for sustainable development of the Mekong basin. This was also to illustrate how the PDG helps to inform implementation of MRC Procedures (PNPCA) when and if they are triggered by Member States for any individual mainstream dam proposal.

In this respect the 1995 Mekong Agreement established a series of protocols for Member Countries to notify and consult with each other if they wish to engage in any major infrastructure

developments (such as hydropower schemes) on the Mekong or its tributaries, particularly if those developments have significant trans-boundary impact. These Procedures for Notification, Prior Consultation and Agreement (PNPCA) state that when considering proposals for mainstream hydropower developments, the Joint Committee must try to avoid inter-state disputes by resolving, determining and reaching agreement on whether the development:

- Optimise water use;
- Provides better benefits than can be derived through cooperation and trade-offs;
- Has an established right of claim against further proposed uses;
- Assesses the potential impacts on multi-stakeholder's rights and interests; and
- Provides for planning security.

More information on the PNPCA is available on the MRC website.[3]

MRC's Strategic Environment Assessment (SEA) of mainstream dams

The first presentation was on the MRC's Strategic Environment Assessment (SEA) of mainstream dams. The SEA is evaluating the development opportunities and risks presented by the proposed mainstream dams and the regional distribution of these opportunities and risks, as well as avoidance, mitigation and enhancement alternatives and strategies. The SEA takes into account the influence of the operational and planned mainstream dams in Lancang-Mekong reach of the basin. Cooperation arrangements with China have been established for this purpose.

In the presentation it was noted: [4]

On the SEA timeframe and approach

- Timeframe May 2009 – June 2010
- Implemented by MRC with NMCs (line-agencies)
- Consultative process at national and regional levels with government, private sector and CSO / NGOs
- China engaged as strategic partner – information exchange on design and operation issues

On the SEA Implementation

- Undertaken as a multi-disciplinary, cross-cutting initiative by MRCS involving all relevant MRC programmes
- Directed by SEA Work Group, chaired by the CEO of MRCS
- Coordinated by MRC Initiative on Sustainable Hydropower (ISH)
- Consulting Team resource is the Integrated Centre for Environment Management (ICEM) based in Hanoi with national/ international team
- SEA does not do new research – it compiles, digests and synthesizes MRC and national data – best available information and analysis

[3] http://www.mrcmekong.org/
[4] http://www.mrcmekong.org/ish/SEA.htm

The MRC's Strategic Environment Assessment (SEA) of mainstream dams will also enhance the baseline information for government review of project-specific Environment Impact Assessments (EIAs) prepared by the developers, and inform how the MRC can best enhance its support to Member Countries when the PNPCA process starts for any of these projects.

MRC Basin Development Plan (BDP) and the wider IWRM-Based strategy for the Lower Mekong basin

The second presentation was on the MRC Basin Development Plan (BDP) and the wider IWRM-Based strategy for the Lower Mekong Basin, which reflects Article 2 of the Mekong Agreement. The BDP presentation identified the approach MRC has adopted to define the "development space" and boundaries within which each country can plan and optimize it cross-sector water resourced development strategies and projects, while respecting the 1995 Mekong Agreement. The BDP uses scenarios agreed to by Member States and explicitly considers the many development synergies and tradeoffs among the different development sectors, such as irrigation and hydropower synergies and the hydropower and fisheries tradeoffs.

Readers were also referred to material available on the MRC Website from the 2nd Regional Stakeholder Forum hosted by the MRC Basin Development Plan, 15-17 October 2009. [5]

[5] http://www.mrcmekong.org/free_download/BDP-2nd-reg-stakeholder-forum-ppt.htm

Annex 1

AGENDA

Developer and Line Agency Briefing Meeting on the MRC
Preliminary Design Guidance for Proposed Mainstream Dams in the Lower Mekong Basin
Initiative on Sustainable Hydropower (ISH)

Date: **Tuesday 20 October, 2009**.		Venue: **Novotel**, Vientiane, Lao PDR
08.30 – 09:00	Registration	
09:00 - 09:15	Introductory remarks	Mr. Jeremy Bird, CEO
Session 1: Presentation on the Preliminary Design Guidance Sections		Chaired by Dir. Hung
09:15 – 9:35	Section 1: Navigation	Mr. Phirun Hiek Navigation Programme Coordinator
09:35– 10:55	Section 2: Fish Passage	Mr. Xaypladeth Choulamany Fishery Programme Coordinator
10:55 - 10:25	Coffee	
10:25 – 10:45	Section 3: Sediment Management and River Morphology	IKMP Programme Representative
10:45-11:05	Section 4: Guidance for Water Quality and Aquatic Ecology	Vithet Srinetr EP Programme Coordinator
11:05-11:25	Section 5: Safety of Dams	Voradeth Phonekeo ISH Manager
11:25-12:00	Open Question and Answer Session for Developers and Line Agencies	All participants facilitated by Larry Haas (ISH Advisor)
12:00-12:15	Next steps Discussions	Facilitated by Larry Haas
12:15-13:30	Lunch	
Session 2: New MRCS Studies relevant to the preliminary design guidance		Chaired by Dir. Hung
13:30-14:00	MRCS Background Presentations : Strategic Environment Assessment (SEA) of proposed mainstream dams and the Basin Development Plan	Larry Haas (ISH Advisor) Ton Lennearts (BDP TCA)
14:00-14:30	MRCS Staff available for questions and in-depth discussion with developer teams	Only for those who need additional or detail clarification
14:30-14:45	Closing remarks	Dir Do Manh Hung

Annex 2:

List of Participants

Cambodia

Cambodia National Mekong Committee

1. H.E Mr. So Sophort, Deputy Secretary General of CNMC
2. Mr. Nong Sareth, Deputy of Hydroelectricity Department, MIME
3. Mr. Danh Serey, Deputy of EIA Department. MOE
4. Mr. Heng Sovannara, Deputy of Fisheries Conversation Department of Fisheries Administration, MAFF
5. Mr. Keo Sereay Pich, Chief of River Management Office, Department of Hydrology and River Works, MOWRAM

Lao PDR

Lao Line Agencies

6. Mr. Viraphonh Viravong, Director General, Department of Electricity, Ministry of Energy and Mines
7. Dr. Daovong Phonekeo, Deputy Director General, Department of Electricity, Ministry of Energy and Mines
8. Mr. Phuthasack Khemmapa , Environnmental Specialist, WREA
9. Mr. Seumkham Thammavongsa, Deputy director Environment, Department Of technical, Ministry of Energy and Mines
10. Mr. Chansaveng Bounngong, Director of Power Sector Planning Division, Department of Electricity, Ministry of Energy and Mines
11. Mr. Souphanh Gnabanhdith, Director of Port Navigation Channel Division, Department of Environment Social Impact Assessment,
12. Mr. Chansanouk Khounouvong, Head of ESIA Center in Energy Section, Inland Waterway Transport Department, Ministry of Public work and Transport
13. Mr.Akhane Phomsouvanh, Head of fisheries Management Unit , Department of Livestock and Fishery
14. Mr. Daungkham Singhanouvong , Head of capture unit, LARREC
15. Mr.Thongthip Chandalasne, Technical Officer Department of Water Resources/LNMCS
16. Mr. Xaypaseuth Phomsoupha, Director General, MIEM

Thailand

Thai Land National Mekong Committee

17. Mr. Nirat PHURIPAHNYO, Civil Engineer Senior Professional, Department of Water Resources
18. Mr.Thanatip Jantarpakde, Chief of IMO Affairs Section, Marine Department,
19. Dr.Apichart Termvidchakorn, Senior Expert, Department of Fisheries

20. Mr.Somchai Sittibodekul, Civil Engineer-Senior Professional, Department of Alternative Energy Development and Efficiency
21. Mr.Charan Thepouyphon, Environmentalist- Senior Professional, Office of Natural Resources and Environmental Policy and Planning

Viet Nam

Vietnam National Mekong Committee

22. Le Duc Trung, Secretary General of VNMC
23. Doan Ke Ruan, Member of TRG, EVN1
24. Nguyen Vu Trung, Department of Environmental Appraisal, MONRE
25. Nguyen Sy Khoi, Department of Water resources management, MONRE
26. Truong Hong Tien, ISH Coordinator for Vietnam

Developer Representatives or Staff

MEGA

27. Mr. John Chu Beng Han , Project Coordinator, MEGA
28. Mr. Houmphone Bulyaphol, Advisor, MEGA
29. Mr. Khoo teng Kear, Consultant, MEGA

Charoen Energy

30. Mr.Saknoi Leangtongplew, Deputy Managing Director, Charoen Energy and Water Asia Co., Ltd
31. Mr.Nanthaphan Hansarphiphat, Business Development Manager, Charoen Energy and Water Asia Co., Ltd
32. Charoen Energy and Water Asia Co., Ltd

China Datang

33. { Name written in Chinese) China Datang Overseas Investment Co. Ltd
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40. { Name written in Chinese) China Datang Overseas Investment Co. Ltd

Thakho

41. Thakho HPP Project
42. Thakho HPP Project
43. Thakho HPP Project
44. Thakho HPP Project
45. Thakho HPP Project
46. Thakho HPP Project
47. Vicent Piron, Director Commercial – Projects Export

China Southern Power Grid., Ltd

48. Mr. Lui Wenjian,
49. Ms. Zhang Peng

CH. KARN Chang

50. Mr. Somsak Ruchacharusawang
51. Natee Yanpirat
52. Rewat Suwanakith
53. Thanawat Trivisvavet
54. Khamphuy Jirararuensak
55. Van Dau
56. Nopado Inthalib

Other Developer Representatives

57. Yeong Chee Meng , Project manager
58. Xiao Hai Feng
59. Do Xuan Binh
60. Nguyen Duy Giang
61. Le Tran Phue
62. Vu Van Dun
63. Nguyen Xuan Tan Viet, Civil Engineer MSc Project Manager Hydropower Plants, Switzerland
64. Mr. Helmut Stahl
65. Thongpheth Douangngeun, EDL
66. Vilaphorn Visounnavath, EDL
67. Niranda

Mekong River Commission Secretariat (MRCS)

68. Mr. Jeremy Bird, CEO
69. Mr. Do Manh Hung, Director OPD
70. Mr. Voradeth Phonekeo, Project Manager, ISH
71. Mr. Xaypladeth Chounlamany, Programme Coordinator, FIP
72. Mr. Geerinck Lieven, CTA, NAP
73. Mr. Phirun Hiek, Programme Coordinator, NAP
74. Mr. Lawrence Haas, Consultant, ISH
75. Mr. Vithet Srinetr, Environment Programme Coordinator, EP
76. Mr. Ton Lennaerts, BDP
77. Mr. Carlos Carmoli, BDP
78. Mr. Te Nathavuth, TSD DIS
79. Mr. Bounphet Phommachack, OP
80. Dr. Somphong Boonprasit, Senior Hydrology
81. Ms. Chanchouly Atthanaphone, Secretary OPD
82. Ms. Olida Sayarath, Secretary ISH

83. Mr. Erland Jensen, CTA