Council Study

Work Plan: Formulation of Development Scenarios for the Hydropower Thematic Area

5th RTWG Meeting
Siem Reap, Cambodia
13-14 August 2015

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Sub Scenario for hydropower thematic area

- The concept proposed for Sub Scenario of hydropower thematic area was conceived and proposed for the 1st time for consideration
- The concept take stock of the content of the “Assessment of basin-wide Development Scenarios – Apr 2011” and the application of the Preliminary Design Guidance
- Figures and numbers are indicative. They can be refined after the concept for HP Sub-Scenarios has been accepted.

Three main development scenarios approved during 3rd RTWG Meeting

<table>
<thead>
<tr>
<th>#</th>
<th>Name</th>
<th>Level of Development*</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>ALU</td>
</tr>
<tr>
<td>3</td>
<td>Planned Development Scenario 2040</td>
<td>2040</td>
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</table>

*Levels of developments for the various thematic areas: ALU = Agric/Landuse Change; DIW = Domestic and Industrial Water Use; FPF = flood protection/floodplain infrastructure; HPP = hydropower; IRR = irrigation; and NAV = Navigation
HPP Thematic Sub-scenarios

- **Subset of Planned mainstream HPs implemented (HPS1):** No Joint Operation (limited coordination) where each hydropower dam will be operated to maximize their individual energy production. The “subset” will be determined with MC on the basis of realistic constraints to full development.

- **Reservoir Operation Alternative 1 (HPS2):** Level of Development as for HPS1 With Joint Operation and good coordination among all MS Dams and by taking account operation for navigation lock, fish passages, sediment flushing as well as measure to maintain acceptable water quality during and after sediment flushing.

- **Reservoir Operation Alternative 2 (HPS3):** With some basin wide Joint Operation and good coordination among all MS Dams and most tributary dams to strengthen flood management and flood protection measures throughout the Lower Mekong Basin as well as to maximize navigation potential.

### Subset of Planned mainstream HPs implemented No Joint Operation (HPS1):

**Operation:**
- **No Joint operation:** All dams operate on “an independent basis”
- Each hydropower dam will look to maximize their individual energy production

**Level of Development**

1. Assuming that only Sesan 2 HPP built in Cambodia
2. Some 6 - 8 Mainstream Dams which mainly are in the Lao PDR,
3. About some 80% of Tributary hydropower dams built in Lao PDR and Cambodia;
4. All the 6 UMB Chinese dams should be included in this scenario.
HPS2 (JO): Reservoir Operation Alternative 1

Operation:
• With Joint Operation and good coordination among all MS Dams only
• To include in the simulation wherever possible: details flow operation for navigation lock, fish passages, sediment flushing
• as well as measures to maintain acceptable water quality during and after sediment flushing. 
  (mitigation measures)

Level of Development:
1. As for HPS1

HPS3 (JO): Reservoir Operation Alternative 2:

Operation:
• With Joint Operation and good coordination among all MS Dams and most Tributary dams.
• May include:
  – strengthening flood management and flood protection measures throughout the Lower Mekong Basin
  – Impact mitigation
  – as well as to maximize navigability in the Mekong Mainstream

Level of Development:
1. As for HPS1

NOTE:
To be analysed after results of HPS1 &2 are available. The key issues and constraints and impacts may then feed in to alternative basin coordination approach.
Dams in China to include in the EDS scenario:
1. Manwan Dam
2. Dachaoshan Dam

M/S Dam:
1. Xayaburi Dam

Chinese Dams:
1. Manwan Dam
2. Dachaoshan Dam
3. Jinghong Dam
4. Xiaowan Dam
5. Nuozhadu Dam
6. Gongouqiao Dam
Planned Chinese dams in the lower reaches of Lancang river

1. Manwan
2. Dachaoshan
3. Jinghong
4. Xiaowan
5. Nuozhadu
6. Gongouqiao
Data and assumption

- Most data used in the Model for “Assessment of basin-wide Development Scenarios – Apr 2011”
- Any additional data from the MCs are welcome, particularly the operation rule curves
- Any missed data or information will be assumed using the experts opinion and experiences

## Schedule

<table>
<thead>
<tr>
<th>Task</th>
<th>Dates</th>
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<tbody>
<tr>
<td>Draft Work Plan for the Formulation of Development Scenarios</td>
<td>Completed</td>
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<tr>
<td>Progress Update – 5th RTWG Meeting</td>
<td>13-14 August 2015</td>
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<tr>
<td>Technical Work Sessions – Development of Operational Rule Curves and Data Review</td>
<td>TBD</td>
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<tr>
<td>National Consultations (combined with all other Thematic Teams)</td>
<td>September – October 2015 (Tentative)</td>
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<tr>
<td>Approval of Scenarios and Data 6th RTWG Meeting</td>
<td>October – November 2015 (Tentative)</td>
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The RTWG is specifically requested to:

- Take note of the progress
- Provide feedback and agree if possible with the proposed development scenarios
- Provide feedback and guidance on the approach for determining the level of development and management for each of the proposed thematic sub-scenarios