Review and Update of Basin-wide Sustainable Hydropower Development Strategy for the Lower Mekong Basin
1. The MRC-BDS and SP for 2016-2020

❖ **Outcome 2:** Environmental management and sustainable water resources development **optimized for basin-wide benefits** by national sector planning agencies

➢ **Output 2.1:** *Basin-wide Strategy for Sustainable Hydropower Development* updated and approved

➢ **Objective:** “Optimal and sustainable hydropower development alternative pathways are explored, proposed and discussed – taking into account opportunities to enhance benefits beyond national borders and minimise adverse transboundary impacts while supporting water, food and energy security”
2. Need for updated Sustainable Hydropower Strategy

- **Large-scale hydropower development** is likely to have substantial impacts on economic, social and environmental conditions in the LMB.

- **Impacts are not equally shared** across MRC Member countries and heavily borne by the most vulnerable groups through changes in their livelihoods.

- MRC has studied alternative development pathways in the *Assessment of basin-wide Development Scenarios*.

- Major focus of SHDS is trade-offs in economic, environmental and social values with careful appraisal of associated uncertainties and risks.

- MRC studies recommends **integrated basin development and management planning**, and **basin-wide cooperation** to achieve BW Sustainable Development.
3. Overall Progress

**Year 2017**

✓ **Concept Note (CN)** prepared, discussed and finalized through national and regional consultations

✓ **Overall confirmation of high priority** by MCs in 2018

✓ JC took note of Concept Note to guide the **implementation in 2018** (24th MRC Council Meeting)

**Year 2018**

✓ **Consultant team (ECA + NEs)** mobilised and kicked off in March

✓ **Inception Report** shared with MCs in the Regional consultation meeting on 7th May

✓ **Draft Discussion Paper #1** shared and discussed with MCs in the National Meeting during 9 – 20 August
4. Process of Developing SHDS

- National Plans (PDP, Irrig) HP Status and flexibility
- Regional Interconnection
  - Gather data and existing Scenarios/planned pathways
  - Detail alternative pathways and evaluate
  - Regional Planning Workshops consider options
  - Sustainable Hydropower Development Strategy and Action Plan

- Input to Regional Processes, Sector Masterplans
- Input to National Plans
- SHDS 2019-Negotiation, Joint Actions, cooperation Nat/Reg

SHDS analytic work

CIA -baselines
Council Study BDP Delta Study SEA
5. Approach to Defining Pathways

**CURRENT PLANS PATHWAY**
Equivalent to Council Study M3 Scenario – all planned and proposed projects built by 2040
Represents the ‘baseline’

**DEFINE ALTERNATIVE PATHWAYS**
Deferral of some projects beyond 2040 based on assessments of harm relative to benefits
Investigates the changes in benefits and negative impacts resulting from changes in the project mix

**HARMONISE WITH NATIONAL POWER DEVELOPMENT PLANS**
Match pathways to national PDPs
Investigates how changes in LMB hydropower development impact on national electricity supply

**CASE STUDIES OF BENEFIT ENHANCEMENT / DESIGN MITIGATION**
Changes to project design and configuration that cannot be modelled at an aggregate level
Investigates whether design guidance and transboundary cooperation enhance benefits / reduce impacts
6. How Might Alternative Pathways Look?

- **Commissioned:** already operating
- **Committed:** considered to be so advanced as to be irreversible
- **Candidate:** planned or proposed, may or may not be built

*Only candidate dams are assumed to be able to be deferred under the alternative pathways*

**CURRENT PLANS**

Build all planned and proposed projects

Equivalent to Council Study M3 scenario

*Represents the ‘baseline’*

**POWER UTILITY PERSPECTIVE**

- Minimise costs of electricity supply
- Avoid resettlement

**ENVIRONMENTAL PERSPECTIVE**

- Protect biodiversity
- Protect environmentally sensitive areas
- Reduce greenhouse gas emissions

**SOCIAL (LIVELIHOODS) PERSPECTIVE**

- Protect fisheries (for food)
- Protect agriculture
- Avoid resettlement
# 7. Converting Perspectives to Screening Indicators

| Protect fisheries (for food) | **Connectivity** | Keeping connectivity between river reaches allows fish passage and sediment flows |
| Protect agriculture          |                |                                      |
| Avoid resettlement           | **Displaced person / MW** | Is resettlement ‘excessive’? |
| Protect biodiversity         | **Flooding of environmental ‘hotspots’** | Flooding of national protected areas |
| Protect environmentally sensitive areas | **‘Footprint’ of the dam in environmentally sensitive and ecologically important areas** |
| Greenhouse gas emissions     | **Greenhouse gas emissions** | Reductions compared to alternative power sources |
| Minimise costs of electricity supply | **Levelised Cost of Energy** | How much does hydropower from the dam cost? |

## Categories and Type

<table>
<thead>
<tr>
<th><strong>CATEGORY</strong></th>
<th><strong>TYPE</strong></th>
<th><strong>SCREENING INDICATORS</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Social (Livelhoods)</td>
<td>Transboundary</td>
<td>Connectivity</td>
</tr>
<tr>
<td></td>
<td>National</td>
<td>Displaced persons</td>
</tr>
<tr>
<td>Environment</td>
<td>Transboundary</td>
<td>Flooding of environmental ‘hotspots’</td>
</tr>
<tr>
<td></td>
<td>National</td>
<td>Flooding of Protected Areas</td>
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<tr>
<td>Climate Change</td>
<td>Transboundary</td>
<td>GHG savings (*)</td>
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<tr>
<td></td>
<td>National</td>
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<tr>
<td>Economic</td>
<td>Transboundary</td>
<td>Levelised Cost of Energy</td>
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8. Harmonising Hydropower Development with National PDPs

- **Pathway definition** also has to take into account the need to harmonise intended levels of hydropower development with the national PDPs.

**Exports under the Current Plans pathway**

Changes made from assumptions on allocation of hydropower capacity and energy contained in MRC database.

**Comparison with National PDPs**

- Focus on ensuring transboundary consistency
- Capacity within a country and supplying that country kept unchanged from Current Plans

**Proposed Approach**

## 9. Regional Power System Integration

An inter-connected grid in the region are already being implemented under Regional Power Trade Coordination Committee (RPTCC), but major steps would include:

| Increased coordination of operations | a) Wheeling of power through third countries (Vietnam-Lao-Thailand)  
b) Short-term power exchanges to meet temporary needs  
c) Increased use of hydropower imports for load-following |
|--------------------------------------|------------------------------------------------------------------|
| Increased integration of planning and investment | a) Identifying those power projects with the greatest regional benefits  
b) Regional coordination of timing of investments  
c) Development of benefit-sharing mechanisms between LMB members (including use of power markets) |
| Regional projects and development of power markets | a) Coordinated regional power planning and joint investment projects  
b) Sharing of reserves across LMB countries  
c) Active long and short-term trading of power across countries |
10. Overall basin-wide pathway evaluation

- **Certainty and reversibility** – there is a case for impacts that are more uncertain and permanent to be given a higher weight.

- **Income distribution** – impacts that disproportionately affect low income / more vulnerable groups might be given higher weights.
11. Next Steps

Keys factors to success

- Same group of participants from hydropower/energy and water resources development should continue engaging until the end of the process exercise.
- Fully support from NMCs to invite the “right” participants especially from Energy Planning to the workshops.
- Adhere to the agreed schedule and timeline.
Thank you