[Collaborative Research Between ERI/PARI] Scope of the Workshop

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Energy Research Institute (ERI), Chulalongkorn University

Kensuke Yamaguchi
Prasert Reubroycharoen
Dawan Wiwattanadate
Hisashi Yoshikawa
Ichiro Sakata
(Inquiries to: gucci.kensuke@gmail.com)

Project Overview

<On-Grid>
JICA's Electricity Master Plan

To improve electricity access

<Near Grid>	<Off-Grid>	<Border>
by expansion of the National grid	by making best use of local resources and enhancing connectivity	by building up connectivity with neighboring countries through power trade and FPI.

Bottom-up methodologies for research 2013-2014

1st stage Electricity demand forecast

Fieldwork

Possible power options, cost analysis, etc.	Possible small scaled renewable capacity development options, cost analysis, etc.	Myanmar's interest for power trade and FDI from Thailand, cost analysis, etc.

Case Study

(Good practices from GMS and lessons for Myanmar)	Good practices of renewables and IPPs from GMS lessons and conditions for success	Good practices of power trade and FDI from GMS, lessons and conditions for success

Connectivity development simulation among mini-grids

Possible decentralized connectivity options

TODAY's FOCUS

Neighboring perspective Thai actors' analysis

Objective view and potential Thai investors' ./ power traders' analysis

Integrated Energy Strategy

HRD/Capacity Building

"National Energy Management Committee" has already been formed under the Vice President. Following up the success of Lao PDR, we will conduct "scenario-making" and prepare policy recommendations that will lead to an "integrated longer-term energy strategy" of Myanmar.

Overview of our research initiative

- Research counter-part
  - Energy Research Institute (ERI), Chulalongkorn University
  - ERIA, member of Energy Research Institute Network
- Research period

Necessity of power development for enhancing the rural electrification in Myanmar

- 1st phase: October 1st 2013 – June 30th 2014
- 2nd phase: July 1st 2014- June 30th 2015 (expected)

- Rationale

-Necessity of power development for enhancing the rural electrification in Myanmar

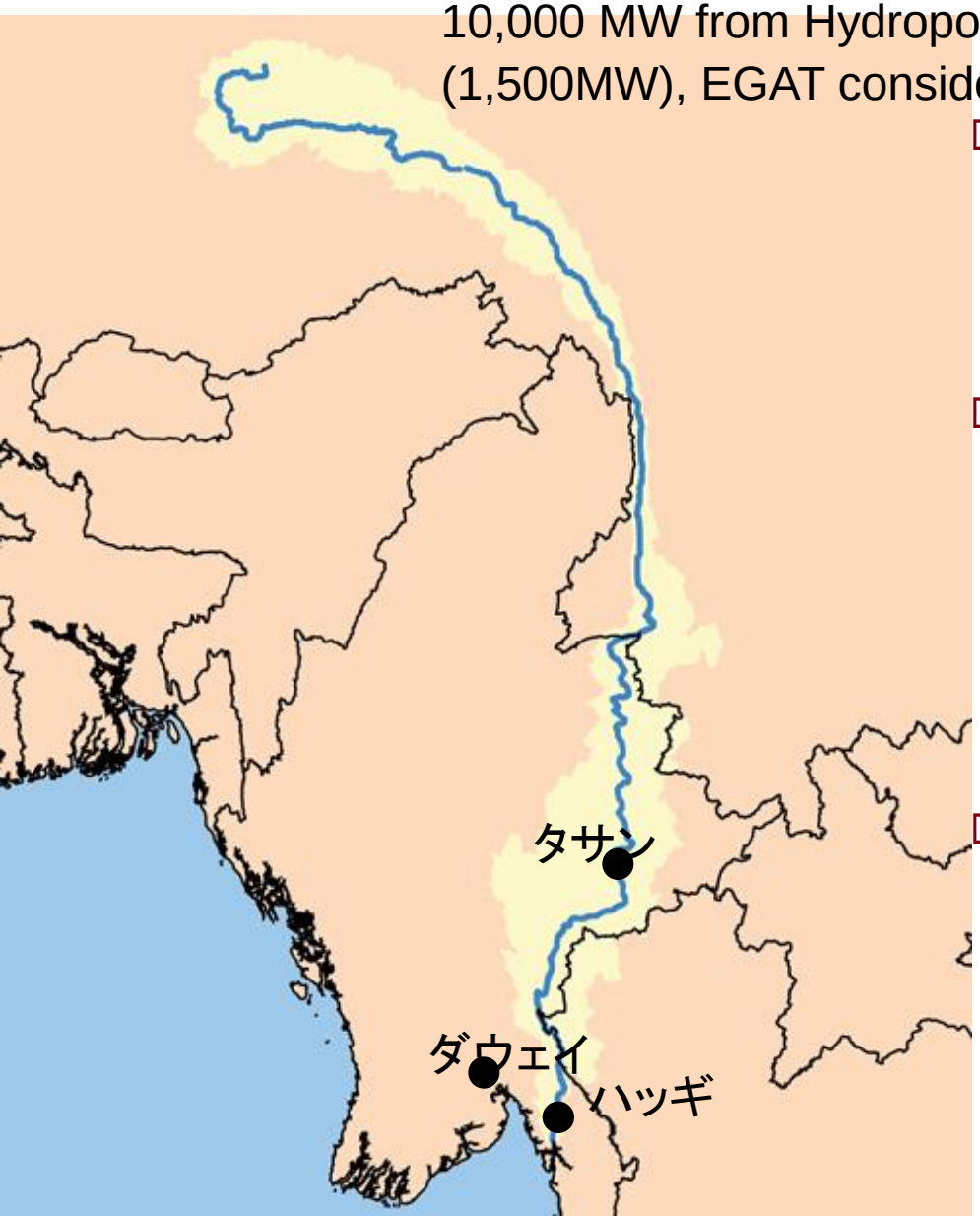
-How to benefit from “left-over” of capital flows from the neighboring countries who aim to fuel own power demand?

-Win-win bilateral trade between Myanmar and Thailand in IPP business?

IPP investment in Myanmar from Thailand

- EGAT plans power import increase - 10,000 MW from Coal fired, 10,000 MW from Hydropower. Despite of the previous plan (1,500MW), EGAT considers to add up to 10,000 MW from Myanmar.
  - Coal fired;
    - Dawei；7,000MW by EGCO, Ital-Thai, and Mitsubishi Corporation
  - Hydropower (The Salween River)
    - Tasang；6,300MW by Ratchaburi, and Three Gorges (三峡集団)
    - Hutghi；1,190MW by EGATi, and Sino-Hydro (中国水電)
  - Example scale comparison …
    - Okutadami Dam (560MW）
    - Kurobe Dam (335MW)

However, the plan remains the "long-sitting" not moving forward.



Research questions;

- How can power-trade craft the win-win relationship between Myanmar and Thailand?

  ① What kind of conditions is expected to be mutually beneficial in power trade?

  ② What are the barriers when attempting to achieve the proposed “win-win power trade”? and;

  ③ What are the policy recommendations in order to remove the identified barriers?

Why so reluctant?

Investment

Generation Project
Coal / Hydro

IPPs Investor
EGATi, EGCO, GPSC

Concerns

Left over

Power Trade

Civil / Local Society

EGAT
Off-take Purchase

MEPE
Domestic Supply

Finance

Lender
Public/Private Bank

Stakeholder Meeting

2013			2014					
OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN
⇒⇒⇒ Literature Surveys		● WS1 BKK	⇒⇒⇒ (Un)Structured Hearing		● WS2 BKK	⇒⇒⇒ Structured Hearing		● WS3 NPT
Step 1: Identify the barriers on each case study			Step 2: Analyse the socio-economic factors in identified barriers			Step 3: Seek for how to remove the identified barriers		

Framework for barrier analysis

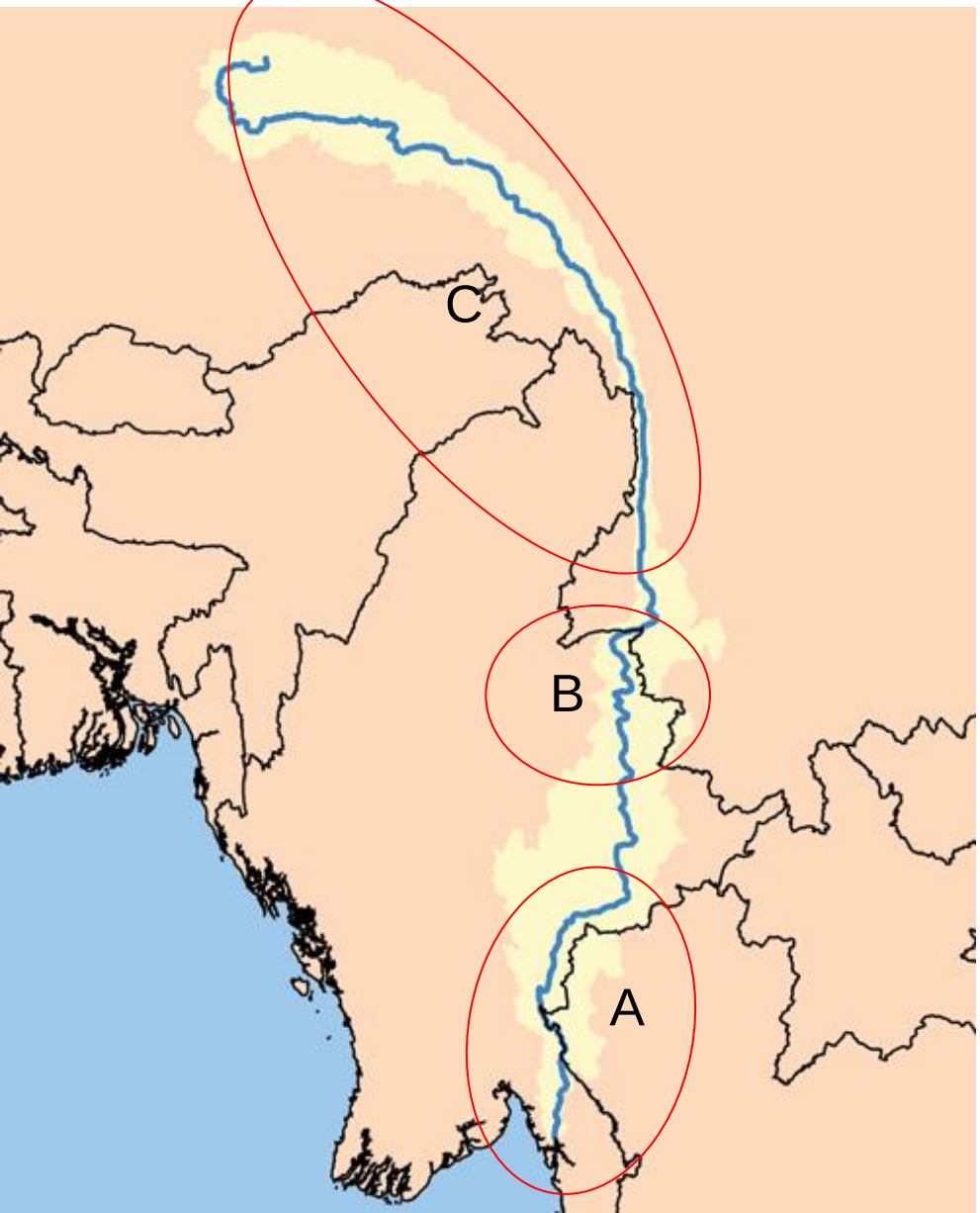
- Current status of literatures
  - Previous study of IPP mostly focuses on the political and institutional barriers
  - Contrary, major literatures on barriers in FDI discusses wider range of barriers including social aspect
  - UN DESA (2005) indicates the typological approach to analyse barriers multi-dimensionally; (1) Technical, (2) Economic, (3) Political, (4) Legal, (5) Social and (6) Environmental aspects

Findings

	Economic Barrier	Social Barrier
Coal-fired plant	•Due to the comparably high operational cost, it is difficult to make the project bankable. •Moreover, It is difficult to get lender such as World Bank and Asian Development Bank.	•Recent environmental NGOs movement should be severer in near future. •A compensation payment attached to its relocation is not so huge as mega hydro.
Hydro Plant	•Though its initial cost is huge, operational cost is low. •With the scale of economy, huge hydro (eg 7,000mw: Tasan) should be economically feasible.	•Larger and larger hydro plants are, severer and severer social/environmental impacts are. •Also, the dam location is mostly in armed conflict areas.

From 1st to 2nd Phase

2nd Phase:
Power development in Salween River



- Point A: down-stream of Salween; jointly Thai/Chinese and export to Thailand
  - Thai/China: Hutghi【1360MW】
  - Thai/China: Tasan【7000MW 】
  - Chinese: Wei Gyi 【5000MW (Appx)】
  - Chinese: Ywathit【4500MW】
- Point B: Upper Salween; led by Chinese to export to China
  - Kunlong Dam(滾弄)【1400MW】
  - Nong Pha Dam (瑙帕)【1000MW】
- Point C: Chinese territory Nujiang (怒江); 13 dams are planned to be developed

What are key barriers to implement large hydro dams in Salween River?

Research Schedule

2014						2015					
JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN
⇒⇒⇒ Literature Surveys			● WS1 BKK	⇒⇒⇒ Rapport Building (NGOs)			● WS2 BKK	⇒⇒⇒ Survey: Local Community			● WS3 BKK
Step1				Step2				Step3			
•Purpose: To identify key barriers				•Purpose: To draw hypothetical solutions				•Purpose: To check the hypothetical solutions			

Today's Workshop: Questions to be discussed…

What are key barriers to implement large hydro dams?

[Session1: Introduction]	
13:30-13:40 pm	**Welcome Speech** Prof. Dawan Wiwattanadate (Chula)
13:40-13:55 pm	**Opening Speech: Scope of the ERIA/UT Research** Prof. Hisashi Yoshikawa (UTokyo)
13:55-14:10 pm	**Scope of the Workshop** Mr. Kensuke Yamaguchi (Chula)
14:10-14:25 pm	**Keynote: Various Barriers in Energy & Environmental Projects** Mr. Taisuke Odera (Eight-Japan Engineering Consultants)
14:25-14:30 pm-	**Q & A** [Moderator] Prof. Hisashi Yoshikawa (UTokyo)
******Coffee Break (Incl. Photo Session)*** (-15:00 pm)***	
[Session2: Background & Fieldwork of Power Integration]	
15:00-15:20 pm	**Back Ground: Chinese Investment in Myanmar** Dr. Prasert Reubroycharoen (Chula)
15:20-15:40 pm	**Lessons from Connectivity Between Lao-Thailand** Dr. Venkatachalam Anbumozhi (ERIA)
15:40-15:45 pm	**Q&A** [Remark] Mr. Yoshio Okawa (JBIC)
15:45-16:05 pm	**Lessons from Fieldwork: Myanmar-Chinese Power Integration** Mr. Kieth Rabin (KWR International)
16:05-16:20 pm	**Social Barrier in Hydro Development** Mr. Kensuke Yamaguchi (Chula)
16:20-16:30 pm	**Q & A** [Moderator] Prof. Hisashi Yoshikawa (UTokyo)
[Session3: Conclusion]	
16:30-16:45 pm	**Outreach Endeavor: Policy Training Workshop in Myanmar** Dr. Masa Sugiyama (UTokyo)
16:45-17:00 pm	**Final Discussion (Incl. Closing Remark)** [Moderator] Prof. Hisashi Yoshikawa (UTokyo)