



Policy
Alternatives
Research
Institute

Global energy issues and the role of a research university

Prof. Ichiro Sakata

Graduate School of Engineering /

Director, Policy Alternatives Research Institute (PARI)

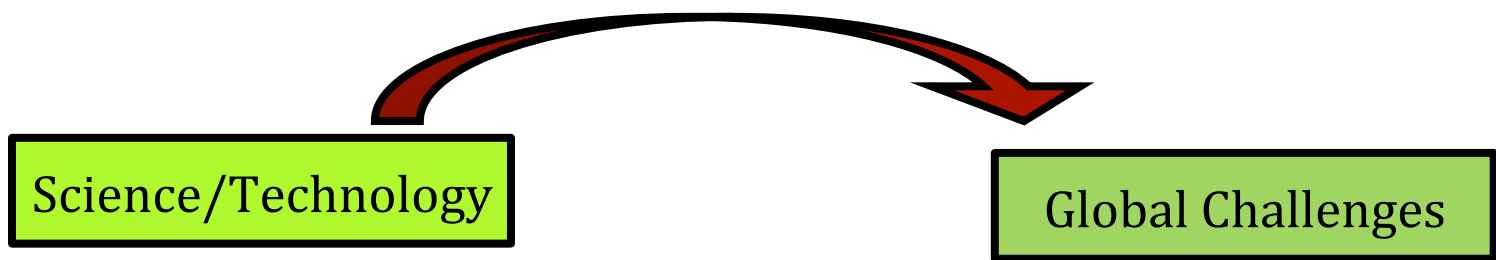
The University of Tokyo

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Innovation system at the global frontiers

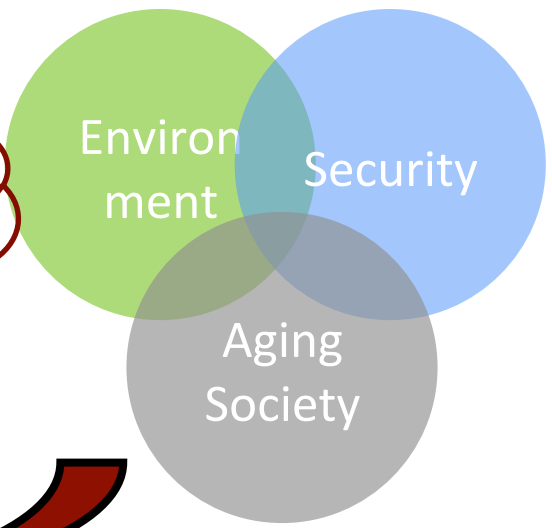
Technology, policy and social system

Analyze / Strengthen / Solve / New Social System



- ① Policy Discussion
- ② Identification of To-be Model
- ③ Designing new social system

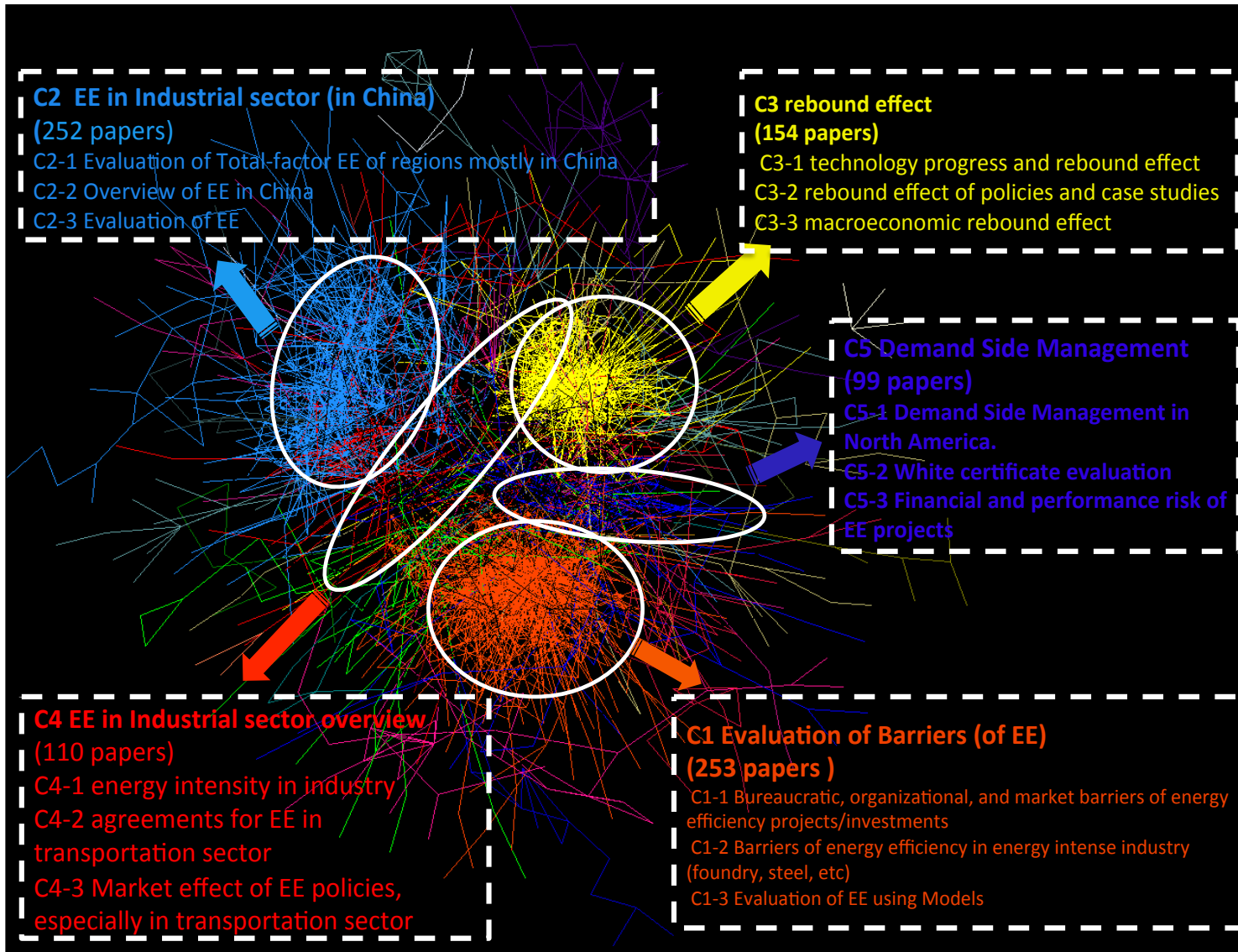
PARI



Rapidly growing

Stimulate / Demand / Feedback

Academic knowledge In the field of energy efficiency



Energy situation of Southeast Asia from a global perspective

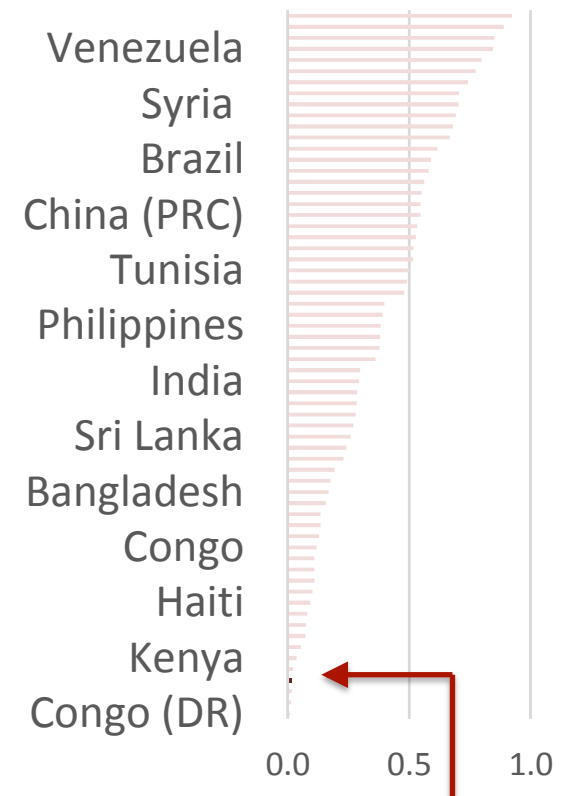
Road to universal access to modern energy

- Universal energy access is one of the three pillars of the UN's Sustainable Energy for All (SE4ALL)
- Some countries like **Myanmar** exhibit energy poverty on par with sub-Saharan Africa; studies are being conducted by JICA, WB, ADB
- Evaluating two options of electrification (grid extension vs micro-grid) is academically challenging

Need for energy subsidy phase-out

- Some countries have large energy subsidies, causing large fiscal burden & disincentives for energy efficiency
- Because of large subsidies, **Myanmar** has difficulty with financing power capacity development and rural electrification program

Energy Development Index (EDI) by International Energy Agency (IEA) (2011)



Myanmar is placed 60th out of 64 countries, although it is a resource rich country particularly in terms of natural gas hydropower resources.

Research on Rural Electrification in Myanmar and Social Implementations (1)

(1) Technical Issues:
Is the 100% goal appropriate?
Extension of transmissions vs
Independent micro-grids?
Sufficient power capacity?

[Target]
electrification rate
100% by 2030

(2) Social/Econ Issues:
Obstacles in power supply
development--environmental
problems, local protest, legal, etc?
Cost burden--ODA? Private?
China? Electricity tariff increase?

(3) Improved Environment for
Policy Making and
Implementation:
Sufficient HR and technology/
supportive?

[Present]
Electrification rate
below 30%*

*The national census was conducted last year for the first time in more than 30 years and the accurate figure is unknown at this point.

Research on Rural Electrification in Myanmar and Social Implementations (2)

(1) Quantitative scenario analysis such as costs required for rural electrification

- Total power generation in 2030 would be insufficient.
- Achieving a 70% electrification rate in 2030 would require not only investment for transmission lines but also for approximately 430 MW micro-grids (\$7.6 billion) (tentative estimation).

(2) Analysis of obstacles in power development

- Social agreement for hydropower
- Bankability for coal thermal power

(3) HRD in policy making/implementation and dialogues with stakeholders

- Since September, 2014, “The Energy Policy Workshop” has been held for 50 mid-career public servants, researchers and NGO experts.



Future Plan:

Further Enhancement of HRD and Policy Research Using International and Intra-school Networks



International
collaboration

Research & information dissemination on challenges & policies of energy security, environmental & economic growth especially in areas with rapid energy demand increases



Myanmar



Laos



Indonesia

HRD that can promote cross-sectional energy policies based on evidence



National University of Laos



Chulalongkorn University, Thailand

Research on cross-sectional/
multidisciplinary international
energy policies

Academic research in the university such as engineering, policy science and economics



Backup slides

Research on Rural Electrification in Myanmar and Social Implementations (4)

Next Step

1. Improvement of analytical accuracy:

Organizing the concepts and categorizing of centralized electrification and distributed electrification

2. Field study:

Analysis of the trend of Chinese capitals regarding hydropower development of the Salween River and collaboration with other countries

3. HRD and dialogues:

Development of policy proposals to be reported to the National Energy Management Committee (NEMC) in May-June 2015

4. Institutional framework for collaboration:

Discussion for MOU with responsible ministers and agencies has begun.

International Energy Analysis and Policy Research Unit of PARI The University of Tokyo

Missions

- To analyze the energy supply-demand structure and policies focusing on Asia, and to present challenges and problems by facilitating debates from international viewpoints
- To provide policy recommendations based on the updated energy policies and their accomplishments

Activities

- Report on **“Energy Efficiency Roadmapping Project in Lao PDR”** (2011-13)
- **“Energy Policy Roundtable”** (2012-), **joint workshops and symposium** such as with IEA, OECD, IFRI, etc.
- **Joint research** with Energy Research Institute, Chulalongkorn University, Thailand (2013-)
- **Research on Rural Electrification in Myanmar (2013-)**
- Providing policy recommendations



Research on Rural Electrification in Myanmar and Social Implementations (1)

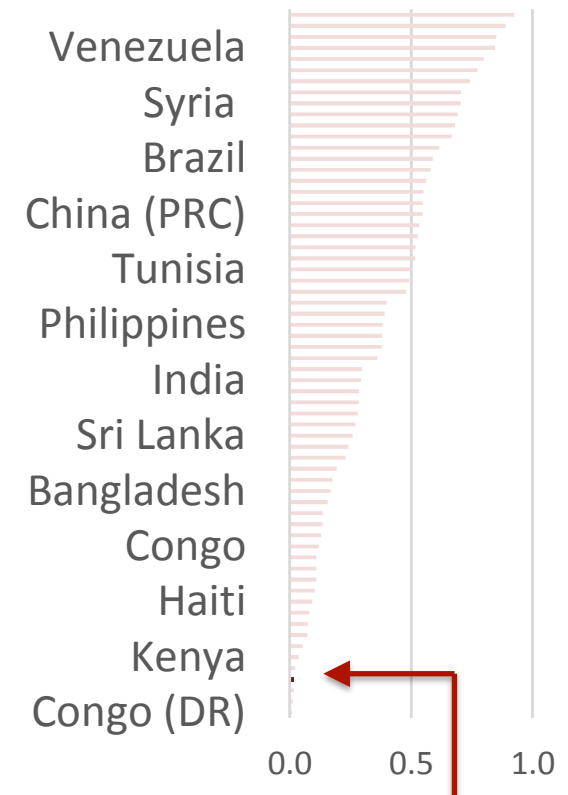
Background

- The project started as a chapter of ERIA's "Myanmar Comprehensive Development Vision" (MCDV) in 2013.
- **Policy issues and trends :**
 - Myanmar as a target in UN's "Sustainable Energy for All"
 - **Several big energy researches** by JICA, ADB, WB, etc.
 - Huge **cost burden** where fossil fuel export is a main source of national income & electricity tariff is subsidized.
 - Increased **environment** consciousness of the residents
- **Technical issues:**
 - Electrification **by extension of transmission lines** <->

Activities beyond academic research

- **HRD in research & policymaking** thru int'l collaboration
- Interaction needed between PARI's research expertise and actual int'l deployment and social implementation in Asia.

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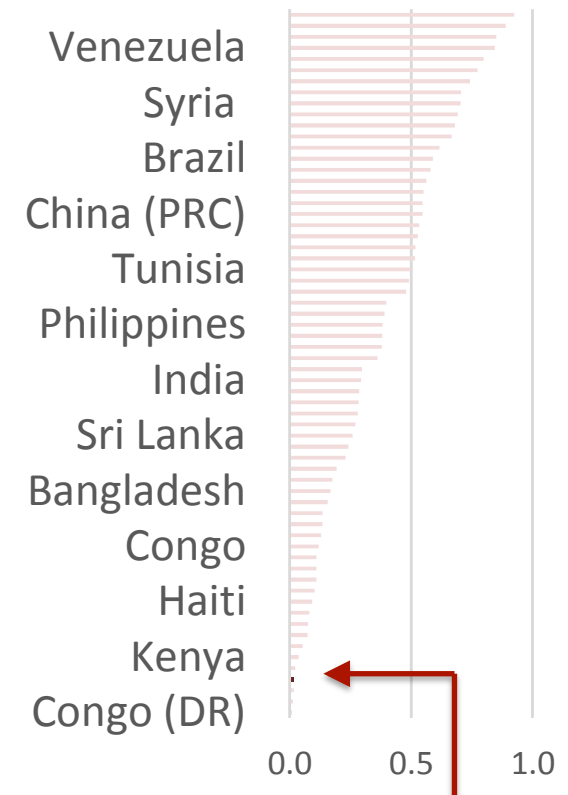
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- **Technical issues:** Electrification **by extension of transmission lines** <-> Distributed electrification **by micro-grids**

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