

Available online at [www.sciencedirect.com](http://www.sciencedirect.com)**ScienceDirect**

Energy Procedia 58 (2014) 87 – 94

---

---

Energy  
**Procedia**

---

---

Renewable Energy Research Conference, RERC 2014

# A Struggle of Multi-level Governance: Promoting Renewable Energy in Indonesia

Jens Marquardt<sup>a\*</sup><sup>a</sup>*Environmental Policy Research Centre, Freie Universität Berlin, Ihnestr. 22, 14195 Berlin, Germany*

---

## Abstract

A shift towards renewable energy is a complex, multi-dimensional policy goal that involves national and subnational actors within a multi-level governance system – especially in heavily decentralized countries like Indonesia. This leads to the following research question: How does the multi-level governance framework in a decentralized country like Indonesia affect efforts for a transition towards renewable energy? The country serves as a case study due to its highly decentralized political system. This qualitative research is especially based on interviews with relevant national and subnational stakeholders. Transition management is used as a theoretical framework. This paper concludes that weak local capacity, a lack of awareness for national intentions on subnational levels and vice versa as well as missing consultation during policy formulation are major obstacles for renewables support in Indonesia.

© 2014 The Authors. Published by Elsevier Ltd. This is an open access article under the CC BY-NC-ND license (<http://creativecommons.org/licenses/by-nc-nd/3.0/>).

Peer-review under responsibility of the Scientific Committee of RERC 2014

*Keywords:* Transition management, energy transition, decentralization, policy implementation, Southeast Asia

---

## 1. Introduction

An energy transition is a complex, multi-dimensional policy goal that involves various actors on different levels of decision-making within a multi-level governance system. According to scholars like Geels [1], Loorbach and Rotmans [2] or van den Bergh et al. [3], who take a multi-level governance perspective, a regime shift towards

---

\* Corresponding author. Tel.: +49-163-6078767; fax: +49-30-83856685.  
*E-mail address:* [jens.marquardt@fu-berlin.de](mailto:jens.marquardt@fu-berlin.de)

renewable energy involves activities not only on the national, but also on subnational levels. This multi-level framework raises questions of coordination and conflicts between different actors in a political system – both horizontally and vertically.

Southeast Asia is a highly relevant region when it comes to energy transitions. Most countries show an enormous increase in energy demand: The Association of Southeast Asian Nations (ASEAN) [4] predicts an annual growth rate of 4.4% for the region's energy demand until 2030. Therefore, energy security is one of the major concerns for the future. RE could be an option to tackle those concerns, but its support and implementation faces severe governance challenges arising from conflicts and coordination between different levels of decision-making as this paper argues. This leads to the following research question: How does the multi-level governance framework in a decentralized country like Indonesia affect efforts for a transition towards renewable energy?

A multi-level governance perspective is vital to highlight patterns of coordination and interaction between various levels of decision-making relevant for changing the electricity regime towards renewable energy. Mainly based on interviews with experts in Indonesia this qualitative research identifies missing links between different levels of decision-making as a barrier for renewable energy support. Weak capacity on the local level, a lack of awareness for national intentions among subnational authorities and vice versa as well as a gap between national planning and local implementation due to a lack of consultation during policy formulation are major obstacles. This paper aims to increase the awareness among policy-makers for these missing links. For its theoretical part, this paper critically discusses transition management with its multi-level perspective that lacks empirical experiences from outside the OECD world.

## 2. Theoretical Framework

Addressing global challenges like climate change, biodiversity loss or exploitation require deep-structural changes in a variety of areas of human life. These socio-technical transitions are complex challenges about macro-change, long-term processes which involve a high number of actors and entail various areas of society [5]. Defined as a “structured process of learning, appropriate to the social and technological complexity” [6] transition management provides a fruitful approach to investigate these transitions. The approach involves a long-term planning through innovative bottom-up experimentation in a more strategic way by coordinating different levels of governance and fostering self-organization for radical innovations towards sustainability [7].

An energy transition can be seen as a successful regime shift that depends on changing worldviews as well as new innovations. The following figure provides a vast overview on two major principles of transition management: multi-level and multi-phase perspective.

Since the beginning of its development in 2001 [8] the approach has been discussed and applied within OECD-focused social sciences. Yet, it has received only little attention in so-called developing countries. According to Loorbach [9] translating the approach into other contexts “poses an inspiring challenge”. This paper takes this challenge as the starting point for its analysis on the Indonesian multi-level governance system.

Transitions depend on local pilot projects and models for further development. This is especially true for countries with no or only little experience with RE. Transition management provides a framework for the relation between local projects and their national and global environment. Applying transition management to countries outside the OECD should be fruitful – at least in theory. If this is true for Indonesia should be discussed with the help of this paper. At the same time, this mainly OECD-centric approach itself should be critically assessed and discussed.

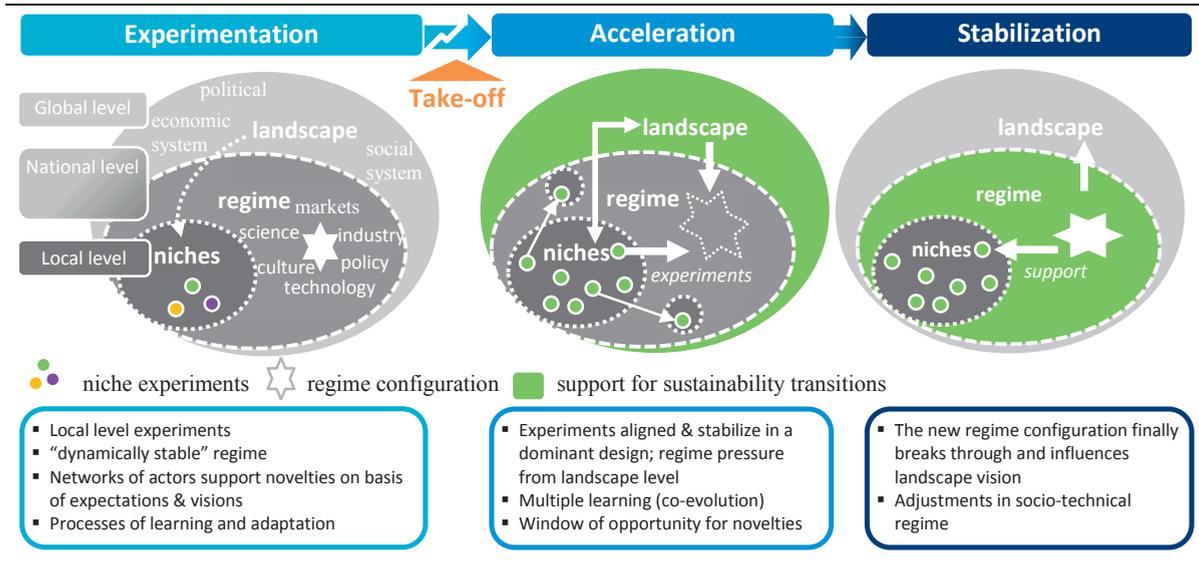


Figure 1: Transition management as a multi-level, multi-phase approach (illustration by the author).

### 3. Methodology

Interviews with 50 national and subnational stakeholders of the Indonesian electricity sector are the primary source of information for this qualitative research (see appendix 1). To answer the central research question the empirical part of this paper is structured in the following way: (1) An overview of the Indonesian electricity sector is provided. (2) Based on that, RE support in Indonesia is analysed from a multi-level perspective. (3) Finally, the situation is discussed in the light of transition management. The empirical section provides first ideas on the applicability of the transition management approach. Therefore, certain framework conditions in Indonesia need to be highlighted before applying transition management. The following figure provides an overview on the analytical steps to be taken:

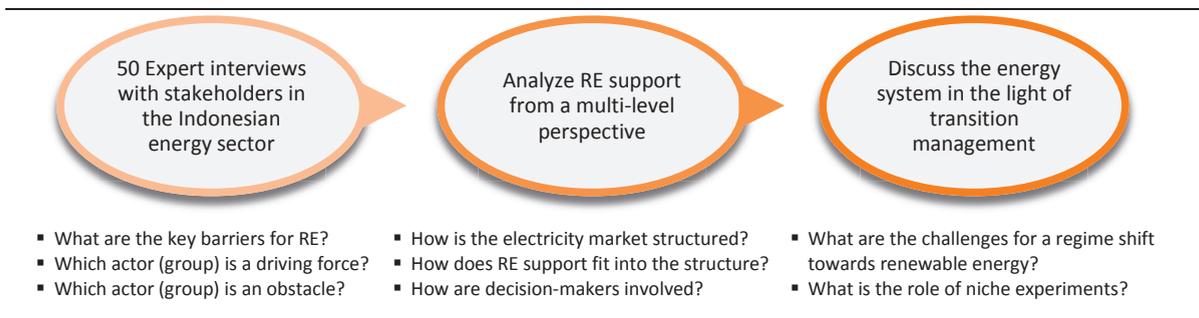


Figure 2: Summarizing the methodological approach of this work (illustration by the author).

### 4. Findings from Indonesia

With more than 237 million inhabitants Indonesia is Southeast Asia's biggest and the world's fourth most populous nation. Its richness in natural resources (such as coal) and the huge domestic market make Indonesia "the heavyweight of Southeast Asia" [10] and the "primus inter pares" [11] among ASEAN countries. For electricity in Indonesia renewable energy sources play a marginal role. The electricity market is dominated by fossil fuels,

although Indonesia became an oil importing country in 2003 and withdrew its OPEC membership in 2009 due to increasing energy demand. Yet, domestic coal is abundant and dominates electricity supply, whereas renewables are mostly being used for small-scale electrification in remote off-grid areas (except for geothermal and large hydropower projects). More than 20% of the archipelago’s households still live without any connection to the grid [12]. The national government plans to increase the share of new and renewable energy (NRE) – including liquefied coal and nuclear – in the primary energy mix from four to at least 17% by 2025 [13].

4.1 Findings from Expert Interviews

Between March and June 2014 qualitative semi-structured expert interviews have been conducted. Interview partners include national and local governments, businesses, civil society actors, the academe, and development cooperation. The following figure summarizes some findings from these interviews that are relevant for this paper:

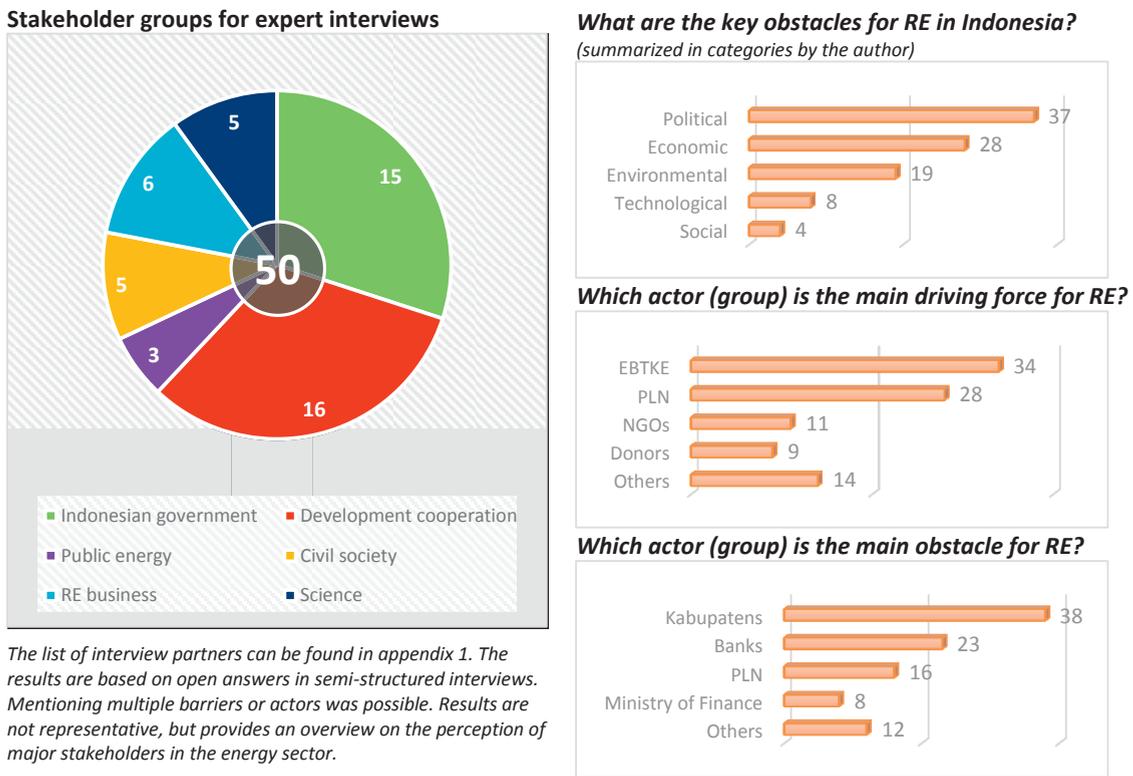


Figure 3: Summary of the expert interviews in Indonesia (illustration by the author).

Political factors that closely related to multi-level governance (e.g. decentralization, complex corruption, lack of coordination) are perceived to have a major influence on renewable energy support in Indonesia. To overcome current obstacles for RE most interview partners see national authorities such as the Ministry for Energy and Mineral Resources (ESDM) with its Directorate General for New and Renewable Energies (EBTKE) or state-owned companies like PT Perusahaan Listrik Negara (PLN) as driving forces whereas the districts (Kabupaten) are considered to be the main barrier for renewables. This can be underlined with a negative perception of most interview partners towards the overall decentralization process in Indonesia.

4.2 Renewable Energy Support in Indonesia from a Multi-level Governance Perspective

From a narrow perspective Indonesia’s electricity system seems to be more centralized than in other countries due to PLN’s dominant role: The state-owned company bundles the country’s electricity transmission and

distribution system and 85% of Indonesia’s power generation. Independent Power Producers (IPPs) need to negotiate a contract with PLN to sell power to the grid.

From a multi-level governance perspective the picture becomes much more complex: On the national level various ministries are involved when it comes to issues related to electricity: ESDM is responsible for energy policies and regulations, the Ministry of State-owned Enterprises has a shareholder function for PLN, whereas the Ministry of Finance is responsible for subsidies and loans. The National Development Planning Body (BAPPENAS) has a planning function for the Indonesia’s overall development. Depending on the specific source of energy, further ministries are involved. All these ministries can act as veto players for renewable energy support.

Besides this horizontal fragmentation of responsibilities concerning energy regulations a vertical differentiation along the decision-making process needs to be added to the picture to understand potentials and barriers for renewable energy support in Indonesia. Due to a process of rapid decentralization (1999-2004) the local regencies (Kabupaten) and cities (Kota) are responsible for issues related to energy, including renewable energy planning and development, project implementation, provision of permits and licenses etc. Specific RE projects cannot be implemented without the local governments’ support – especially when public land acquisition is involved. Being administratively located between the national and the local government the relatively weak provinces (Provinsi) can only facilitate coordination and communication between national and local governments, especially when more than one Kabupaten is involved.

Based on the expert interviews the following figure visualizes the electricity sector from a multi-level perspective:

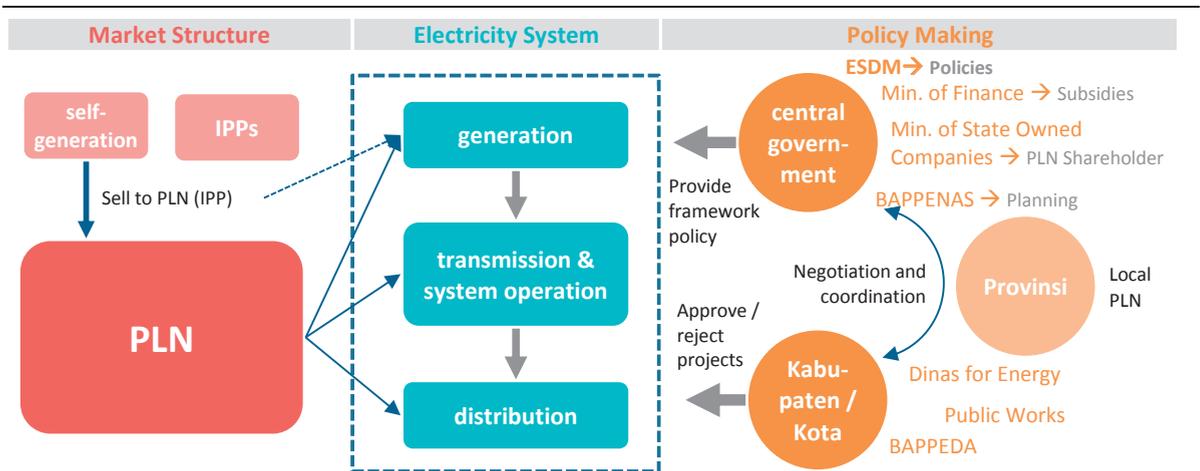


Figure 4: The Indonesian energy sector from a multi-level perspective (illustration by the author).

#### 4.3 Indonesia in the Light of Transition Management

As outlined above transition management provides a framework to foster an energy transition towards renewable energy. Applying the multi-phase multi-level perspective reveals the following aspects:

1. *Multi-phase perspective:* Based on the current situation in Indonesia renewables are still at an early stage of experimentation. At the same time Indonesia has already decades of experiences with large hydropower projects. The first geothermal power generator was inaugurated in 1983 – leading to contradiction to the linear model.
2. *Niche experimentation:* With its highly decentralized administrative structure and local political power Indonesia has perfect conditions for niche level experiments – at least in theory. In practice, small-scale demonstration projects for renewables can indeed be observed. However, scaling-up and learning effects are extraordinary rare.

3. *Socio-technical regime*: Despite some supportive policies (e.g. feed-in tariff) the existing fossil fuel based regime is stable – with a PLN-dominated market structure, a coal-based industry sector and a lack of local technology.
4. *Landscape framework*: Overarching framework conditions support coal as the main source for electricity supply – due to increasing energy demand, energy security, price concerns and the importance for the domestic economy. Renewables are considered for off-grid electrification, but not for large-scale base load capacity.
5. *Coordination*: Above all, a lack of coordination between national and subnational decision-makers can be observed during project and policy implementation leading to a lack of scaling-up, learning effects and diffusion.

## 5. Discussion

Based on a multi-level governance perspective on renewable energy support in Indonesia major findings from the interviews can be summarized as followed: Weak local capacity, a lack of awareness for national intentions among subnational authorities as well as a missing understanding for local circumstances among national policy makers and a lack of consultation between decision-makers both horizontally and vertically during the process of policy formulation are critical obstacles for renewable energy support. Knowing those political bottlenecks for renewable energy development is by far not new. However, taking a multi-level perspective and applying approaches like transition management helps us to understand the relation between those obstacles and their bigger political, systemic context in a decentralized country like Indonesia. Based on these initial findings, more in-depth analyses are needed to link specific obstacles to their political framework and – most importantly – also outline possible solutions within the bigger context. A multi-level governance perspective per se does not provide a generalizable blueprint for energy transitions around the world. However, if it is carefully adapted to the country-specific context and its government system it can help to outline specific obstacles for renewable energy and elaborate on measures to overcome them.

Referring to transition management Indonesia would be in an early phase of experimentation for renewables – despite decades of experiences. Indonesia has established a very stable fossil fuel based electricity regime, making any planning or managing of its transition a challenge. Having said that, this paper is by far not comprehensive. However, it aims to trigger the public policy discussion about renewables in the light of multi-level governance.

## 6. Conclusion

In the beginning we asked: How does the multi-level governance framework in a decentralized country like Indonesia affect efforts for a transition towards renewable energy? This paper has demonstrated the importance of multi-level governance issues for supporting renewables. Based on that, the following recommendations can be made:

- Renewable energy support involve actors not only on the national, but especially on the local level that can act as veto players (decentralization). Policy makers should focus more on the process of policy implementation.
- A lack of awareness for renewables on the local level is often criticized for leading to delays and uncoordinated activities. This shows the need for involving local representatives already at an early stage of policy formulation.
- Policies should promote bottom-up support for renewables through the creation of local niches for experiments. This potential is still underdeveloped in Indonesia where renewable energy support is mainly a top-down process.

Transition management has turned out to be beneficiary for identifying barriers and potentials for renewable energy support to gain a more holistic understanding of a potential energy transition. Yet, there are clear limits to the approach that should be seen as a model for highlighting certain aspects, but cannot predict the course or the actual outcome of an energy transition. Moreover, transition management follows the Eurocentric paradigm of a very positive attitude towards bottom-up support, underestimating other factors such as the need for strong centralized leadership. Many reports talking about renewables in countries like Indonesia elaborate on national policies, but fail

to consider the role of local governance [14]. Taking this paper as a first overview for discussion more detailed studies are needed to better understand multi-level governance processes for renewables in decentralized countries.

## References

- [1] Geels FW. The multi-level perspective on sustainability transitions. Responses to seven criticisms. *Environ. Innov. Soc. Transitions* [Internet] 2011; 1:24–40. Available from: <http://linkinghub.elsevier.com/retrieve/pii/S2210422411000050>
- [2] Loorbach D, Rotmans J. *Managing Transitions for Sustainable Development*. 2004.
- [3] Van den Bergh JCJM, Truffer B, Kallis G. Environmental innovation and societal transitions: Introduction and overview. *Environ. Innov. Soc. Transitions* 2011; 1:1–23. Available from: <http://linkinghub.elsevier.com/retrieve/pii/S2210422411000219>
- [4] ASEAN. *The 3rd ASEAN Energy Outlook*. 2011.
- [5] Elzen B, Geels FW, Green K. *System Innovation and the Transition to Sustainability*. Transition. 2004
- [6] Van den Bergh JCJM, Bruinsma FR. *Managing the transition to renewable energy: theory and practice from local, regional and macro perspectives*. Cheltenham: Edward Elgar; 2008.
- [7] Meadowcroft J. Engaging with the politics of sustainability transitions. *Environ. Innov. Soc. Transitions* [Internet] 2011; 1:70–5. Available from: <http://linkinghub.elsevier.com/retrieve/pii/S2210422411000074>
- [8] Kemp R, Rotmans J. Transitioning policy: co-production of a new strategic framework for energy innovation policy in the Netherlands. *Policy Sci.* [Internet] 2009; 42:303–22. Available from: <http://www.springerlink.com/index/10.1007/s11077-009-9105-3>
- [9] Loorbach D. *Transition Management for Sustainable Development: A Prescriptive, Complexity-Based Governance Framework*. *Governance* 2010; 23:161–83. Available from: <http://doi.wiley.com/10.1111/j.1468-0491.2009.01471.x>
- [10] Case W. *Politics in Southeast Asia. Democracy or Less*. Richmond: Curzon Press; 2002.
- [11] Smith AL. *Indonesia: Transforming the Leviathan*. In: Funston J, editor. *Government and Politics in Southeast Asia*. London & New York: Zed Books; 2001. page 74–119.
- [12] U.S. Energy Information Administration. *Indonesia* [Internet]. 2014. Available from: [www.eia.gov/countries/analysisbriefs/Indonesia/indonesia.pdf](http://www.eia.gov/countries/analysisbriefs/Indonesia/indonesia.pdf)
- [13] Azahari HL. *New and Renewable Energy Policies* [Internet]. 2012; Available from: <http://energy-indonesia.com/03dgc/03.pdf>
- [14] Damuri YR, Atje R. *Investment Incentives for Renewable Energy: Case study of Indonesia*. 2012.

## Appendix

### *Appendix 1: Interview partners in the Philippines*

Interviews with the following organizations in the Philippines have been conducted for this research:

Gr.	Code	Organization	Position	Date
A) Indonesian Government	A1i	Ministry of Energy and Mineral Resource ESDM	Energy expert	27.03.2014
	A2i	Desa Serut, Gedang Sari, Gunung Kidul, Yogyakarta	Head of Village	01.04.2014
	A3i	Province of Yogyakarta	Chief of Administration	02.04.2014
	A4i	Department for Public Works, Province of Yogyakarta	Chief of Energy Section	02.04.2014
	A5i	Kantor Pertambangan dan Energi, DINAS Gunung Kidul	Chief of Kantor	03.04.2014
	A6i	National Energy Council Indonesia	Board Member	16.04.2014
	A7i	Kahayan Kuala, Pulang Pisau	Head of Village	21.04.2014
	A8i	Dinas Energi Central Kalimantan	Head of Dinas	24.04.2014
	A9i	BAPEDA Kota Sampit	Head of Team RUED	24.04.2014
	A10i	Ministry of Finance (Kementerian Keuangan)	Ministry of Finance	28.04.2014
	A11i	Dinas Pekerjaan Umum, Denpasar, Bali	Head of Dinas	02.05.2014
	A12i	Bidang Energi Dan Sumbar Mineral, Denpasar, Bali	Kepala	02.05.2014
	A13i	Environmental Agency (Badan Lingkungan Hidup)	Head of / Kepala	05.05.2014
	A14i	Directorate General of New RE and Energy Conservation (EBTKE)	Director of Division	09.05.2014
	A15i	State Ministry of National Development Planning (BAPPENAS)	Direktur	29.04.2014
B) Development Cooperation	B1i	GIZ - Energising Development (EnDev) Indonesia	Senior Advisor	05.03.2014
	B2i	GIZ - PEP Indonesia / PDP Indonesia GIZ	Senior Advisor	17.03.2014
	B3i	Embassy of the United States of America	Energy & Natural Resources Officer	18.03.2014
	B4i	GIZ - Decentralisation as Contribution to Good Governance	Head of Programme	20.03.2014
	B5i	Energy and Environment Partnership (EEP)	Chief Technical Advisor	20.03.2014
	B6i	Embassy of Finland	Energy/Climate Change Advisor	21.03.2014
	B7i	USAID Indonesia Clean Energy Development Project	Deputy Chief of party	21.03.2014
	B8i	New Zealand AID	Development Counsellor	24.03.2014
	B9i	Asian Development Bank (ADB)	Energy Specialist (Climate Change)	27.03.2014

	B10i	The World Bank	Energy Specialist	28.03.2014
	B11i	UK Climate Change Unit	Senior Energy Advisor	09.04.2014
	B12i	UNDP	Programme Manager	10.04.2014
	B13i	BIRU (Biogas Rumah)	Sundar Bajgain	15.04.2014
	B14i	JICA	JICA Representative	29.04.2014
	B15i	Programme BIRU (Biogas Rumah), HIVOS	Quality Inspector	02.05.2014
	B16i	KFW	Senior Project Manager	06.05.2014
C)	C1i	PLN (Persero) PT	Director of Planning & Technology	24.03.2014
	C2i	PLN (Persero) PT	Head of Division	25.03.2014
	C3i	Pertamina	Assistant Renewable Energy Project	26.03.2014
D) Civil Society	D1i	Association of Indonesian RE Supporting Industry	Chairman	19.03.2014
	D2i	Greenpeace Indonesia	Climate and Energy Campaigner	25.03.2014
	D3i	WWF-Indonesia	Energy Officer	26.03.2014
	D4i	Association of Indonesian Municipalities	Manager of Local Economics	30.04.2014
	D5i	Indonesian RE Society (IRES/METI)	Deputy Secretary General	30.04.2014
E) RE Business	E1i	Chevron Geothermal & Power Ltd	General Manager	14.03.2013
	E2i	Brama international	President Director	12.03.2014
	E3i	ALBI (The Alliance of Low Carbon Businesses in Indonesia)	Steering Committee Member	16.04.2014
	E4i	Dewata Mason Group	Local CPO	02.05.2014
	E5i	PT Indonesia Power	Environmental Expert	09.05.2014
	E6i	Berkat Karya Sukses	Director	30.04.2014
F) Science	F1i	Australian National University, formerly WWF	PhD fellow	30.04.2014
	F2i	Indonesian Institute for Energy Economics	Executive Director	14.03.2014
	F3i	Department for Physical Engineering, Fakultas Teknik, UGM	Professor	18.03.2014
	F4i	Pustiklat KEBTKE	Bidang Program dan Kerja Sama	02.04.2014
	F5i	International Institute for Clean Energy and Climate Change	Director	28.04.2014