

Assessing the development and climate finance for renewable energy

An application of effectiveness framework for the case of Mongolia

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Abstract

To accelerate sustainable development and mitigate climate change, an increasing amount of finance is being mobilized for the deployment of renewable energy (RE) in developing countries from bilateral and multilateral donors and climate funds. Even though this trend is present in Mongolia, there is still a lack of knowledge about how effective these efforts have been for renewable energy development in the country. Methodologically, despite the increasing use of aid effectiveness principles to assess development finance flows, there is lack of agreed indicators and criteria to assess such principles for the RE sector. The objective of the thesis is threefold. First, it aims to map development finance in energy in Mongolia from 2010 to 2018. Second, it aims to develop an analytical framework capable of integrating principles as established in the Paris Declaration on Aid Effectiveness, with the tailored indicators to RE. Third, it aims to deploy the analytical framework in a case study for Mongolia. The assessment is supported by the analysis of development finance data for energy and the review of ten RE interventions with the co-operation of total 14 donors. To further strengthen the results, interviews with practitioners from the Ministry of Energy, Green Climate Fund (GCF)'s accredited entity XacBank LLC, and Mongolia's Renewables Industries Association were conducted. Findings show that most development partners' practices are aligned with the national policy through results indicators and objective of the RE projects. The areas where integrations of effectiveness principles are most lacking include - mutual accountability, capacity building of local institutions, and inclusive energy NGOs. In conclusion, there is an urgent need for a tracking system that monitors development and climate finance at national and sectoral level in Mongolia. An important policy recommendation relates to enhancing co-operation for local institutions in the achievement of sustainable development goal 7-Affordable and clean energy (SDG7).

Keywords: development finance, climate finance, renewable energy, Mongolia, effectiveness principles

Executive Summary

Problem definition. Climate change is threatening not only the environment but also economic and social conditions. This is especially evident in many (vulnerable) developing countries. At the same time, anthropogenic greenhouse emissions remain unabated in some developing countries. The risks and impacts of climate change and resource inefficiency call for urgent transformation of the energy system, in which the deployment of renewable energy (RE) technologies is crucial. To materialise the transformation, finance has a critical role to play. In fact, the latest IPCC report stressed that a lack of access to finance is a significant barrier to transition towards a low-carbon economy in developing countries. To accelerate the low-carbon transformation, many development partners and countries have mobilised financial efforts while cooperating with developing countries. A fundamental issue is to what extent these finance efforts are effective.

The thesis focuses on Mongolia, a country that faces various pitfalls but also opportunities in terms of energy system transformation. It is also a country that has received important finance flows, as the thesis reveals. The energy system is still dominated by coal, leading to critical energy and environmental issues. The country also exhibits multiple barriers to meet national and international commitments. However, promoting RE in the energy sector offers a unique opportunity to overcome various sustainability challenges. Many development partners have been supporting the deployment of RE; however, the landscape of development finance in the country is still fragmented and lack of coordination among various actors is observed. In addition, one can observe that there is a lack of an overarching methodology to address effectiveness capable of integrating country aspects and key actors at the sectoral level.

Research Aim, Questions and Methodology. The purpose of tracking and assessing development finance to RE is to provide evidence on the current state of the art in terms of progress, opportunities, and obstacles in the implementation of the RE projects to key actors. Ultimately, it is aimed to lay the foundations for more effective development co-operation (e.g., transparent, inclusive, country-driven) for a transition towards low-carbon Mongolian economy. Therefore, proposed research questions (RQs) and assessment methods include:

RQ1. What is the state of development finance into energy and RE in Mongolia?

To answer RQ1, the assessment method first used tracking and mapping development finance commitments from the donors' side using Aid Atlas, an online platform visualizing international development finance available at aid-atlas.org based on the Creditor Reporting System (CRS) of OECD DAC (Development Assistance Committee). Data analysis is focused on the period from 2010 to 2018 in order to see the alignment following the commitments under the Agenda 2030 for Sustainable Development and the UNFCCC Paris Agreement. As a part of tracking development finance to energy in Mongolia, the RE project matching was conducted with preliminary data of donors by reviewing the country policy documents, RE projects, and development partners' website. At the country level, interviews are also used to clarify the key development partners' co-operation.

RQ 2: To what extent is development finance to RE in Mongolia aligned with international and national commitments (e.g. national energy and development plans, NDC, SDG7)?

The alignment of development finance to RE is focused on the method of reviewing policy documents related to RE so that one can identify whether RE interventions are in line (or not) with the country's international commitments and national energy policy. Meanwhile, the assessment used the integration of policy documents and alignment with the global RE target setting suggested by the World Bank's Regulatory Indicators of Sustainable Energy (RISE) and

SDG 7.2.1 that target setting should be comprehensive not only electricity but also district heating, cooling, and transport.

RQ 3: To what extent, is development finance for RE in Mongolia sustained by effectiveness principles?

Effectiveness of development finance is complex to assess. To overcome various methodological challenges, RE is assessed in this thesis by developing an analytical framework based on ‘effectiveness principles’. The framework focuses on different aspects: policy alignment, RE target achievement, private partnership investments in RE, inclusive CSOs in the design and implementation of RE projects and strategies, and financial and economic aspects. In doing so, an analytical framework is developed, integrating suggested factors from literature and development finance components.

Main findings and Discussion. *RQ1:* As a result of tracking the development finance for energy in Mongolia, there are apparent **shifts over time towards RE** since 2015. The increase is aligned with the objective of global development finance. Notably, many commitments of development finance for RE come from bilateral (e.g., Japan, Germany, Korea) and multilateral donors (e.g., ADB, World Bank, EBRD) as well as climate funds. **Solar and wind energy** has received the most substantial finance commitments. Additionally, there was **South-South co-operation** in the **hydro** project financed by China, and a couple of projects funded by multiple donors under **co-financing condition**. Some development partners (e.g., EU Institutions, GGGI) are mostly focused on energy efficiency. In terms of financial flows, there was low disbursement ratio against commitment for RE, and most finance is channelled through loan and other official flows.

RQ 2 and 3: For RE projects, **policy alignment** is mostly evidenced through Mongolia’s **RE targets** and reductions of GHG emissions, including its **NDC**. Indeed, **RE is a bridge between climate and development finance** in Mongolia, hence climate change mitigation and sustainable development. Technical issues such as undermine the achievement of the RE electrification target, so it requires further development. In turn, this exacerbates barriers that prevent the achievement of Mongolia’s Green Development Policy goal. The latest **RE law amendment** with the support of the World Bank, has made ample progress in **supporting existing RE producers** by **new auctioning system**. It allows open competition by increasing **private-public dialogue**. To align with global sustainable energy targets, Mongolia needs further efforts such as setting RE targets in **district heating, clean cooking, and transport**. RE solutions for clean cooking at the target level can advance the solution for tackling air pollution.

When it comes to development cooperation, some efforts were assessed **inadequate**. This includes relatively weak **local institutions** - National Renewable Energy Centre, Mongolia’s Renewables Industries Association (MRIA) and a lack of shared knowledge (e.g., **linkages between RE with other SDGs**). In addition, it is observed that **accountability on social and environmental results of RE** interventions is lacking. There **a lack of consultation with MRIA** in the design of the RE interventions from development partners, and this undermines the effectiveness because currently MRIA is the only active energy NGO influencing both private and public sector. In turn, this weakens the effectiveness of climate/development finance because currently MRIA is the only active energy NGO influencing both private and public sector. Lastly, **inadequate fiscal stability** and transparency of budget subjected of development finance is a barrier for RE investment to Mongolia.

On the **positive** side, many aspects deserve attention. For example, the **co-financing has been successful** to increase the effective transparency among partners. M&E tools used by

multilateral donors are crucial in fulfilling effective results. GCF's accredited entity **XacBank LLC has been effectively implementing** the RE and energy efficiency projects which are inclusive and accountable by stakeholders and gender equality. Likewise, the Mongolian Sustainable Finance Association (MSFA) has been supporting businesses and commercial banks to adopt **green financing system** since 2017.

Conclusion. Assessing both development and climate finance for the RE sector in Mongolia is a complex task. Given all the methodological and data challenges, this research is the first step in providing a more comprehensive assessment about the effectiveness of development finance in the country. I conclude that three main alignments are most useful to monitor effective development finance as applied to the RE sector. First, building a country-specific policy framework and comparison with the global level requirement in the deployment of RE such as RISE. The second aspect is about how result indicators are aligned with the country's defined policy framework as well as SDG7. A third element relates to what extent development partners and implementing agencies embed inclusive (private and CSOs) decision making in the consultation of the RE projects. As a whole, this thesis aims to provide opportunity for future research areas. Given inherent research limitations and challenges (also imposed during the Covid-19 crisis), limitations and areas for further research are duly acknowledged.

Recommendations. This thesis makes the following three policy recommendations - (i) build a comprehensive monitoring mechanism, (ii) strengthen the co-operation with climate funds and NGOs, and (iii) integrate RE policy framework in line with sustainable energy. *First*, tracking the donors' information by using Aid Atlas and applying effectiveness principles can support transparent assessment and inform suitable policy design and effective co-operation. For result indicator of the development interventions, target setting for capacity building local staff and institutions are critically important. *Second*, by adopting good practices, Mongolia can enhance the effective development co-operation (e.g. Strengthening institutions by GCF Project Preparation Facility, promoting NGOs by grant financing, transferring private finance to green growth, increasing gender considerations through GCF Gender Assessment Report). Inclusive CSOs and private sector engagement is especially crucial for accountability. *Lastly*, it is important to set RE target in district heating, clean cooking and transport in Mongolia. Furthermore, policy alignment can be further enhanced with the integration of NDC and SDGs in the energy policy and strategies.

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Abbreviations

ADB Asian Development Bank	KDS Korea Institute for Development Strategy
BAU Business as Usual	LDCs Least developing countries
CIF Climate Investment Fund	M&E Monitoring and Evaluation
CAC Breathe Mongolia-Clean Air Coalition	MSFA Mongolia's Sustainable Finance Association
CSOs Civil Society Organisations	MSME Micro, Small and Medium-Sized Enterprises
CHP Combined heat and power	MRIA Mongolia's Renewables Industries Association
CPI Climate Policy Initiative	

CRS Credit Reporting System	NAPSI Northeast Asia Power System Interconnection
CZE Czech Republic	NAMA Nationally Appropriate Mitigation Action
CPIA Country Policy and Institutional Assessment	NDC Nationally Determined Contribution
DC Direct Current (transmission)	OECD Organisation for Economic Co-operation and Development
EBRD European Bank for Reconstruction and Development	OECD DAC Development Assistance Committee
EU European Union	ODA Official Development Assistance
EHPP Erdeneburen Hydropower Plant	OOF Other Official Flows
ESMAP Energy Sector Management Assistance Program	PPPs Public-Private Partnerships
ERC Energy Regulatory Commission, Ministry of Energy	RE Renewable Energy
FIT Feed in Tariff	RISE Regulatory Indicators for Sustainable Energy
FDA French Development Agency	SDGs Sustainable Development Goals
GEF Global Environment Fund	SDG7 Sustainable Development Goal 7. Affordable and Clean Energy
GHG Greenhouse Gas	SE4ALL Sustainable Energy for All initiative
GCD Center for Global Development	SEI Stockholm Environment Institute
GCF Green Climate Fund	SIDS Small Island Developing States
GGGI Global Green Growth Institute	UAE United Arab Emirates
GoM Government of Mongolia	UNCTAD United Nations Conference on Trade and Development
GPEDC Global Partnership for Effective Development Co-operation	UN DESA United Nations Department of Economic and Social Affairs
IE Independent Evaluation	UNDP United Nations Development Program
IEA International Energy Agency	UNESCAP United Nations Framework Convention on Climate Change
IIASA International Institute for Applied Systems Analysis	UNFCCC United Nations Framework Convention on Climate Change
IKI GIZ International Climate Finance of German Agency for International Cooperation	UNICEF United Nations International Children Emergency Fund
INDC Intended Nationally Determined Contributions	UNIDO United Nations Industrial Development Organization
IPCC Intergovernmental Panel on Climate Change	USAID The United States Agency for International Development
IRENA International Renewable Energy Agency	WB World Bank
JCM Joint Crediting Mechanism	WB IEG World Bank Independent Evaluation Group
MDGs Millennium Development Goals	WHO World Health Organization
MET Ministry of Environment and Tourism	UNSD United Nations Statistics Division
MoE Ministry of Energy	XB XacBank LLC
MoF Ministry of Finance	

1 Introduction

1.1 Background and significance

Climate change is an overriding threat, endangering our environment and economies, including human health, biodiversity loss, deforestation, floods, water supply, poverty and inequality (IPCC, 2018). Impacts of global warming is significantly harmful in the most vulnerable areas including least developed countries (LDCs), landlocked developing countries in Asia and Africa, and small island developing states (SIDS) (Beatriz Felipe P&ez, Jane A. Hofbauer, 2016; IPCC, 2018; UN DESA, 2019).

The IPCC report (2018) also warns that the lack of access to finance is the one of the obstacles to promoting sustainable development and tackling climate change in developing countries. Developed countries have pledged to financially support the developing countries to tackle climate change (IPCC, 2018; UNCTAD, 2019b, 2019a). Mobilizing efforts to accelerate progress on sustainable development and mitigation of GHG emissions brings hope for those vulnerable countries (IEA, UNSD, WB, & WHO, 2019).

Official Development Assistance (ODA), which represents finance for development, was introduced by the Organization for Economic Co-operation and Development (OECD)'s Development Assistance Committee (DAC) to promote economic development and well-being of developing countries since 1970 (OECD, 2018b). Its objective has been shifted to sustainable development and environmental sustainability (Führer, 1994; OECD, 2008, 2017, 2019a). Development finance can be channeled to recipient countries either from bilateral (e.g. Sweden, Japan, Germany) or multilateral development agencies such as the United Nations or World Bank. As part of development finance, climate-related development finance and climate funds have been growing since 2002 (Tara & Gisela, 2016). Climate finance plays a significant role to limit global warming to below 1.5 °C in the Paris Agreement (UNFCCC, 2015a).

According to the United Nations, development finance in sustainable energy infrastructure (e.g. RE technologies) needs to be doubled per year to \$1.3 trillion by 2030 (UN DESA, 2019). This is particularly important in Sub-Saharan Africa and Asia where RE technology is lacking. Many developing countries' dominant energy systems are largely dependent on fossil fuels or use of inefficient technology that are inherently unsustainable (IEA, UNSD, WB, & WHO, 2019; IIASA, 2012; UNDP, 2000). As a result, there are roughly 3 million people who lack access to clean cooking (UN, 2018), and live in a dangerous situation of air pollution in developing countries such as Mongolia (UN DESA, 2019). Therefore, the support of development finance enables energy transition from fossil fuels to more sustainable pathways. Further, scaling up RE leads to stimulate further development such as enhanced learning environments, better health, growing energy savings, and favorable social, economic and environmental conditions (UN DESA, 2019). However, it is critical that development finance is effectively spent in order to support national RE policy and hence related to international commitments.

There are challenges in Mongolia's energy system, especially underdeveloped RE. For example, the recent analysis on energy efficiency and supply (NSO, 2019) Mongolia has inefficient use of energy, insufficient energy supply for its population as an exporter, underdeveloped RE, and high use of coal which harms the environment. These sectoral challenges are discouraging the development of sustainable energy due to the lack of an updated energy sector assessment (UNDP & GOM, 2018). In Mongolia, lack of modern energy services, in particular, extensive use of coal for heating boilers and stoves are another issue both in rural and urban areas (IRENA, 2016; WHO, 2019). It also brings reverse effects such as health risk caused by air

pollution during the cold weather in the capital city Ulaanbaatar, where half of the population resides (WHO, 2019).

“A central Asian country bordered by China and Russia, Mongolia is known for its vast tracts of largely empty grassland, freezing winters and nomadic culture. In recent years it has become known for something else: some of the world’s worst air in the winter months.” (WHO, 2019)

UNDP addressed that until 2016, the Government of Mongolia (GoM) and development partners paid less attention to commitments to the Sustainable Development Goals (SDGs), and especially energy and environmental sectors received less ODA compared to other countries (UNDP & GoM, 2018). This also calls for a need to enhance efforts from bilateral and multilateral development partners for funding RE and climate related interventions.

A couple of factors and principles are suggested by the literature and experts that improve the effectiveness of development and climate finance at the national level. In this context, the principles (ownership, alignment, focus on results, inclusive partnerships, transparency and mutual accountability) established by 137 countries and all donor on Aid Effectiveness (OECD, 2008) is the most common framework to monitor effectiveness of development finance at the country level. This research is planned to systematically assess the development finance which goes to RE sector in Mongolia through effectiveness principles based on the tailored analytical framework (effectiveness framework) by addressing multiple aspects and key actors.

1.2 Problem definition

It can be argued whether global partnership is improving development finance on sustainable development and climate action. For instance, ODA into LDCs has been reduced in the last few years (UN, 2015c). The latest OECD report (2019a) also revealed that ODA providers are failed in that some portion of development finance has been mobilized for unsustainable activities (e.g. financing fossil fuel and coal power plants) which are barriers to sustainable development. Warren (2019) added that mobilization and increasing amount of development finance globally could not affect such a high investment in fossil fuel projects. For example, about USD 4 billion was invested fossil fuel projects in 2016 and 2017 (OECD, 2019a). The study (Warren, 2019) also showed that although a large part of climate finance for mitigation is intended to scale-up RE, only a small portion is focused on clean energy-related projects such as energy efficiency and sustainable cooling. Therefore, some authors (Gutiérrez & Gutiérrez, 2019; Timmons-Roberts & Huq, 2010) contend that strict accounting rules are needed to demonstrate the actual value of the contributions made by developed countries to assist vulnerable communities in responding to the threats of climate change. It is critical to ensure that funding reaches to the people hardest hit by environmental degradation (Timmons-Roberts & Huq, 2010). Also, there are factors from the donor side such as donor motivations regarding political-strategic or economic interests, or the destination of the finance if it is spent on technical assistance, direct budget support, humanitarian or climate crises (UNDP, 2013).

When it comes to development finance in the context of sustainable development and climate change mitigation, especially RE in Mongolia, multiple aspects deserve our attention. After analyzing some literature and exploration (details in Sections 2.3, 2.5 and 2.6), I focused on the following main research gaps.

Firstly, there is lack of assessment for effectiveness from interdisciplinary and systematic approach – all level of inclusion – political, institutional, and stakeholders at the country level. Effectiveness is a contested not institutionalized term both in climate and development finance

globally, and many authors define it differently, depending on the focus area which can range such as reporting the finance and allocation to intervention.

Secondly, there is a lack of methodology for sectoral effectiveness. While the set of principles provide useful guidance about areas for effectiveness, it does not provide a concrete framework for evaluations or indicators to measure effectiveness for RE sectoral insight, per se. Hence, there is no concrete and accepted effectiveness framework integrating RE with development finance. In our case, this is critical because despite the flows of development finance going into the Mongolian energy sector, there is uncertainty about their actual level of effectiveness on RE sector. This makes it difficult to accurately scope any measure or metric of effectiveness, specifically for RE.

Third, in the specific case of Mongolia, there is limited study conducted integrating RE sector and development finance. While some the reports (OECD, 2011; UNDP & OECD, 2016) analyzed general effectiveness of development finance in Mongolia in 2015, since then flows of RE into Mongolia have been growing significantly. In fact, the country analysis did not provide sectoral insights (e.g. the energy sector).

In short, a literature review found the research gaps that there are many studies conducted broader scope in development finance worldwide, however there is very little research on the effectiveness of development finance which channeled to the RE sector (Chapter 2.5.7), and in case of Mongolia it is negligible. Therefore, literature review justifies the knowledge gap, underscoring that analysis of development finance effectiveness in Mongolia's RE development and methodology is needed.

1.3 Aim and Research Questions

The purpose of this thesis is to increase our knowledge about development finance and its level of effectiveness in Mongolia's RE sector, guided by aid effectiveness principles. Ultimately, the result will teach us what are working (effective) and what spheres of development finance effectiveness should be improved in order to achieve the national energy and relevant committed goals by 2030. Specifically, research questions include:

RQ 1: What is the state of development finance into energy and RE in Mongolia? (e.g. flows, main actors, main purpose, main sectoral recipients)?

RQ 2: To what extent is development finance to RE in Mongolia aligned with international and national commitments (e.g. national energy and development plans, INDC, SDG7)?

RQ 3: To what extent, do development and climate finance for RE in Mongolia are sustained by effectiveness principles?

A hypothesis would be that Mongolia has received some possibly an increased portion of development assistance from OECD DAC members to promote RE development.

1.4 Audience

To date, tracking the development and climate finance to RE is very much lacking at the country level, including in Mongolia. The findings of this paper is devoted to local institutions which may use them in the design of policy implication and monitoring the RE projects comprehensively funded by development partners.

Furthermore, from the international arena, development partners play an important role in the data completion and transparency, hence part of the research findings aims to meet the needs of corresponding development partners.

In terms of framework, the indicators and sectoral effectiveness principles in the RE sector as well as how to develop a framework are largely missing. The methodology and results of the paper aim to enhance the indicators gap in the field of development and climate finance effectiveness. Thus, some part of research may be useful for the other researchers.

The thesis presents a methodology that could be applied at the national and sectoral level using development finance data retrieved from Stockholm Environment Institute (SEI)'s Aid Atlas based on OECD DAC database, hence one audience is development finance team at SEI.

1.5 Outline

The rest of this thesis is structured as follows. In Chapter 2 (Literature review), a descriptive literature review was conducted to understand the overall picture of development finance, climate finance and relation with the energy sector and RE. It also presents the summary of existing factors, principles, tools related to effective development and climate finance, and related studies of development finance.

Chapter 3 (Methodology) starts with the overview of case study, Mongolian energy system, then describes the research design: A roadmap to answer RQs. Sub-section includes the methods used for the first stage analysis in tracking development finance to RE in Mongolia. Then, it presents the analytical framework, selected indicators and criteria, followed by additional methods for data collection: policy documents, project information and interviews. Lastly, the chapter explains the scope, limitation and ethical considerations.

Chapter 4 (Results & Analysis) illustrates the main findings including tracking development finance to the energy sector and RE in Mongolia and assessment of effectiveness principles in four themes: 1) ownership and policy alignment, 2) focus on results, 3) inclusive partnerships, and 4) transparency and accountability.

Chapter 5 (Discussion) discusses the reflection on key findings of RQs by integrating the existing studies and perspectives. It also demonstrates the reflection of framework and methodology, and their limitations.

Chapter 6 (Conclusions) presents the main conclusions of the RQs. The final section outlines recommendations and areas of future research.

2 Literature review

This section provides the main concepts and definitions guiding the research at hand. In turn, it aims to justify the main building blocks (factors) of the research methodology. The review covers a range of critical aspects, including the role of development finance, its relationship with climate action and sustainable development.

Given the orientation of this research, this literature review pays attention to the effectiveness of development finance in the context of sustainable development. In addition, it seeks to understand the tools and methods used to analyze development finance effectiveness. Later, it covers development finance in relation to sustainable energy and RE as well as existing papers and grey literature.

2.1 Development finance: Financial instruments

Different terms have been used to characterize international development finance depending on its main objectives (Huang & Pascual, 2017). Those include financial assistance, foreign aid, humanitarian aid, development assistance, development co-operation and official development assistance (Huang & Pascual, 2017). In this paper, I deploy the commonly accepted term of development finance according to OECD's Development Assistance Committee (DAC) and Stockholm Environment Institute (OECD, 2019c; SEI, 2019). According to DAC, official development assistance (ODA) or aid is defined as (OECD, 2018b), "all flows to less-developed countries and multilateral institutions provided by government agencies, including state and local governments, or by their executive agencies", which meet the following tests:

- a) they are administered with the primary objective of promoting the economic development and welfare of developing countries, and
- b) they are intended to be concessional in character, i.e. their terms are significantly softer than the market terms prevailing in the donor country.

In short, ODA is often understood as aid that promotes and targets explicitly the economic development and welfare of developing countries, excluding military aid and promotion of donors security interests and transactions that have primarily commercial objectives (e.g. export credits) (OECD, 2018b, 2018c, 2019c). ODA is divided between ODA loans and ODA grants.

In addition to ODA, there are different types of financial instruments used. In general, OECD provides data on ODA grants, ODA loans, Other official flows (OOF), Private development finance and Equity (OECD, 2019b; SEI, 2019). By definition, *ODA grants* refer to financial resources provided to developing countries free of interest and with no provision for repayment, and *ODA loans* refer to loans that have a sufficient grant element, in terms of either interest rate or length of payback (OECD, 2018c, 2019b). While, *OOF* refers to transactions by the official (public) sector which does not meet the conditions for eligibility as ODA, either because they are not primarily aimed at development or because they are not sufficiently concessional in character. Also, there is *private development finance* (OECD, 2018c, 2019b; SEI, 2019), which refers to financing by civil society organizations. Lastly, *equity* is investments in the form of an ownership stake in an asset or activity, on the expectation of profitable return (OECD, 2018c, 2019b; SEI, 2019).

Disbursement ratio is also a common concept used in development finance (OECD, 2019c; SEI, 2019). According to Aid Atlas (SEI, 2019), this ratio refers to the amount of finance disbursed as a percentage of the total amount committed or approved in the same period.

Furthermore, low disbursement ratios mean that there are challenges with the implementation of projects or that funding was subsequently re-directed after approval (SEI, 2019).

2.2 Climate finance: Relation to development finance

The definition of climate finance is a contested term. There is no internationally agreed definition of climate finance (Buchner et al., 2011). Going back to the history, UNFCCC's Earth Summit (1992) referred to financial resources as transfer of or access to environmentally sound technologies from developed Parties to developing Parties under the Convention commitments that has objective of "stabilization of greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system" (UNFCCC, 1992).

In 2009, UNFCCC Conference on Climate Change in Copenhagen so-called Copenhagen Accord concluded that developed countries pledged to increase mobilizing long-term finance to developing countries for climate change mitigation and adaptation activities by at least US \$100 billion per year by 2020 from a variety of sources including public, private and alternative sources (UNFCCC, 2010). The Copenhagen Accord (2009) also articulates increasing funding for mitigation; especially, climate finance is significant for accelerating climate mitigation to reduce emissions significantly through large-scale investments in developing countries. Furthermore, developed countries intend to continue their support and mobilization goal by 2025 to enhance the mitigation actions and transparency of the implementation (Kurian, 2014).

Despite the debate, the role of development finance in climate action has been significant since development finance is mobilizing activities aligned with environmental sustainability (MDG 7 and 8) and SDGs (UN, 2015b; UN General Assembly, 2000). It means that an increasing portion of development finance is transferred to environmental and climate change projects (UN, 2015b). In this regard, OECD DAC has started tracking development finance and its objectives aligned with Rio Conventions: through so-called "Rio markers" on Biodiversity, Climate Mitigation, Climate Adaptation, Environment and Desertification (OECD, 2016a). Rio markers: ODA activities reported to CSR are marked as either "principal", "significant" or "0" and the criteria is described below. This was initially designed to track the mainstreaming of environmental considerations into development co-operation rather than providing a quantification of finance (OECD, 2016a).

- **Principal:** When the climate change mitigation objective is explicitly described as fundamental in the design of, or the motivation for the activity (e.g. energy intervention) Thus, promoting the climate change mitigation objective, it should be stated in the activity documentation as one of the key reasons for the implementation, otherwise it would not have been funded (or designed that way).
- **Significant:** When the climate change mitigation objective is explicitly stated, yet it is not the underlying reason for undertaking it. Therefore, the intervention has other key objectives, but mitigation objective has been designed to achieving the climate objective.
- **Null:** "0" means that the activity was assessed yet there was no significance related to the objective of climate change mitigation in any significant way. If the activities have not been assessed, then the marker should be empty so that there would not be any

¹ The Convention on Biological Diversity (CBD), the United Nations Framework Convention on Climate Change (UNFCCC), and the United Nations Convention to Combat Desertification (UNFCCC).

confusion between activities that do not target the objective (score = “0”), and activities for which the answer is not known (score = “null”).

OECD (2016b) also added other objectives including Gender, Trade and Participatory Development & Good Governance. Main criteria for these objective is similarly described as above.

2.3 Debates around development and climate finance

Nonetheless, whether global partnership is increasing efforts from development partners on sustainable development in practice can still be debated. For instance, ODA into LDCs had been reduced in the last few years (UN, 2015c). The latest OECD report (2019a) also showed that ODA providers are failed in that some portion of development finance has been mobilized to unsustainable activities which present barriers for sustainable development. Warren (2019) added that mobilization and increasing amount of development finance globally could not affect such high investment in fossil fuel projects. For instance, about USD 4 million invested fossil fuel projects in 2016 and 2017 (OECD, 2019a). The study (Warren, 2019) also showed that although a large part of climate finance for mitigation is intended to scale-up RE, few are focused on clean energy-related projects such as energy efficiency and sustainable cooling.

Some authors (Gutiérrez & Gutiérrez, 2019; Timmons-Roberts & Huq, 2010) contend that strict accounting rules are needed to demonstrate the actual value of the contributions made by developed countries to assist vulnerable communities in responding to the threats of climate change. It is critical to ensure that funding reaches to the people hardest hit by environmental degradation (Timmons-Roberts & Huq, 2010).

Sceptics argue that there are also some inconsistencies between development and climate finance. Tara & Gisela (2016) explained that there is a lack of integration between climate action and sustainable development, for example, that DAC providers are not supporting climate action enough given that donors had taken fewer considerations on recipient countries' climate priorities and needs (OECD, 2019a). While, on the other hand, there is the lack of systematic effort globally to align development co-operation or development finance with the Paris Agreement goals (OECD, 2019a) is the critical challenge for DAC providers moving forward.

In a broader context, factors impacting development and climate finance are donor motivations on political-strategic or economic interests, a destination of the finance what finance is spent on technical assistant, direct budget support, humanitarian or climate crises (UNDP, 2013). In addition, other factors include global level of effectiveness and global partnerships, improved access to climate finance – primarily for LDCs and SIDS, prioritizing utilization of public international climate-related ODA for especially vulnerable countries and people (Tara & Gisela, 2016).

2.3.1 Aid effectiveness

The term “effectiveness” may connect back to 1990s when OECD DAC stated the importance of effective aid in the context of ODA. It mentioned that as “effective development co-operation requires a reconciliation of the range of national policy interests with the underlying objectives of development and measures to ensure that the sum of individual donor efforts adds up to a coherent whole. Greater efforts need to be made to clarify national public opinion that national development assistance efforts are part of a greater international effort” (Führer, 1994). OECD illustrated that the Paris Declaration was the starting point of co-operation for aid effectiveness between developing countries and donors, yet the globally progress of aid

effectiveness was slow to meet the commitment and aid quality targets according to the 2008 Monitoring Survey (OECD, 2008).

In 2005, at the Second High-Level Forum on Aid Effectiveness, the Paris Declaration was developed in order to improve the delivery aid and its effectiveness in the following five principles: *ownership, alignment, harmonization, results, mutual accountability* (OECD, 2008). In 2008, to accelerate the growth on aid effectiveness, the Third High-Level Forum on Aid Effectiveness reaffirms further commitments so-called the Accra Agenda for Action towards the Paris Declaration targets (OECD, 2008).

Later, the Fourth High-Level Forum on Aid Effectiveness, the Busan Partnership with collaboration of 161 countries and over 50 development partner /donor organisations agreed to track and monitoring effective development co-operation under the revised four principles: *country ownership, focus on results, inclusive partnerships, and transparency and mutual accountability* (OECD & UNDP, 2014). The monitoring dashboard with the name of Global Partnership for Effective Development Co-Operation (GPEDC) for sustainable development (GPEDC & UNDP, 2017) is coordinated by OECD-UNDP Joint Support Team which then provides the findings to Global Partnership's Co-Chairs and Steering Committee.

Three rounds of surveys carried out in 2006, 2008 and 2011 to monitor the aid effectiveness through the Paris Declaration principles. The report (OECD, 2011) explained that only commitment of two indicators had been successfully achieved, even though some commitments showed positive progress yet slower (Adbel-Malek & Koenders, 2011). For instance, United Nations report (2015b) concluded that overall ODA had increased significantly during the MDGs commitment period between 2000 and 2014 from USD 81 billion to USD134 billion which is equivalent to nearly 0.3 per cent of the GNI of developed countries. However, 0.3 per cent growth is insufficient in many developing countries including LDCs and SIDS.

2.4 Energy sector: RE is key for development and climate action

Traditional energy systems have largely depended on fossil fuels, which are inherently unsustainable and result in serious challenges such as energy security, climate change, poverty eradication and inequality (Grubler et al., 2012). As result, there is growing consensus in the literature that fossil-fuel based energy systems pose innumerable barriers to both sustainable development and climate change mitigation (IPCC, 2018).

From an international policy perspective, the role of energy in the context of sustainable development emerged more explicitly in the World Summit on Sustainable Development (WSSD) in Johannesburg in 2002. The WSSD addressed various energy-related aspects and links to, for example, human health, biodiversity, agriculture and water which are also later highlighted in the Global Energy Assessment (IIASA, 2012.; Johansson et al., 2012). In addition, energy poverty was an important, albeit hidden element under the poverty eradication, it was stated as critical barrier in developing countries in Decision 9 (United Nations General Assembly, 2002). The Summit (2002) also emphasized the action to mobilize the provision of financial resources to promote sustainable energy, including energy access and affordable energy services.

To address these challenges, the Sustainable Energy for All initiative (SEforALL) was launched by the UN Secretary-General in 2011. In line with the SDGs, SEforALL supports progress on Sustainable Development Goal 7 (SDG7) and the Paris Agreement along with the key working area of Energizing Finance by focusing on energy access, in particular, electrification and clean cooking (Pearce Oroz, G. and Buchner, 2019). Furthermore, the Global Tracking Framework

of UN SE4ALL (tracking SDG 7 energy access and energy efficiency changes) and its Regulatory Indicators (RISE) developed by World Bank, SE4ALL, ESMAP and Climate Investment Funds (CIF) are the global level of assessments that shows a country's policy and regulations in the energy sector within *three pillars of sustainable energy*: Energy access, Energy efficiency and RE (WB, 2017c).

It is agreed that there are many development and climate finance synergies between the Paris Agreement and the SDGs, through the energy sector (Geissdoerfer et al., 2017; UNESCAP, 2018; Van de Ven et al., 2019). In particular, RE plays important role in climate action and global energy transition that IRENA (2019) highlighted shift to RE should be faster and comprehensive including power generation to heating, buildings and transport; on the other hand, energy system transformation requires concerted and consistent policy action to keep the global warming below the threshold (IRENA et al., 2018). In terms of SDGs, SDG 7.2.1 is particularly designed for RE development that in increasing share of RE in total final energy consumption (not primary) is selected the indicator at the global and national level (Ritchie & Mispy, 2018; UNIDO, 2018). The indicator specifically is measured as RE which is inclusive of solar, wind, geothermal, hydropower, bioenergy and marine sources, furthermore the energy mix contains electricity, transport and cooking, heating fuels (Ritchie & Mispy, 2018).

The report (OECD, 2019a) indicates that aligning development finance with the Paris Agreement would also have a positive effect for country development, hence, policymakers should take the scientific knowledge and evidence into integrated climate change and development policy.

RE brings together development finance and climate finance (IPCC, 2018; Johansson et al., 2012). First, this assertion is mostly driven because investments in RE technologies are central to any climate change mitigation strategy (de Coninck et al., 2018; IIASA, 2012.; Rogelj et al., 2018; UNDP, 2000). Second, it is also shown that RE technologies have the potential to contribute to the achievement of multiple SDGs that sustainable energy can improve the other areas such as economic productivity (SDG 8), scaling up sustainable infrastructure (SDG 11), rural development (SDG 1, SDG 2), air quality and health (SDG 3), and environment and climate (SDG 13, SDG 6) (UN DESA, 2019; UNESCAP, 2018). Third, financing energy relates to country development and economic growth via investments in RE technologies. For example, moving from carbon dependency to RE raises the chances of a country's recovery from economic and financial crisis through the job creation and increased demands for goods and services (Mundaca et al., 2016).

Nevertheless, there are still challenges hindering RE development in developing countries, including multiple challenges from the institutional, policy and regulatory level to the market and project level (IRENA, 2019). In addition, IRENA stressed that there is lack of market transparency, lack of financing and experience in project development, and lack of relevant information on regulations, markets and resource availability hence this led to the low level of interests in developing RE projects from investors' perspective.

2.5 The factors and methods to improve effectiveness of development and climate finance

When it comes to measure the effectiveness of development finance, whether it works effectively at the national level, several qualitative, quantitative and mixed methods have been adopted. Below the author categorized the factors may improve effectiveness of development and climate finance found in the range of literature.

2.5.1 Aid effectiveness principles and indicators

Aid effectiveness principles are perhaps the most well-known, lasting approach in the context of development finance. Principles and indicators proposed by High-Level Forum (OECD & UNDP, 2014) are focused on *strengthening* developing countries' *institutions*, increasing the *transparency* and predictability of development resources, enhancing *gender equality* and supporting greater *involvement of civil society*, parliaments and the *private sector* in development efforts for the GPEDC monitoring framework (GPEDC & UNDP, 2017). The framework (GPEDC & UNDP, 2017) comprises twelve indicators or factors under four principles and tracks the implementation of effectiveness principles through its voluntary and country-led monitoring process aligning development stakeholders' policies and practices. Those 12 indicators are described below (UNDP, 2018; OECD & UNDP, 2014). In addition, the assessment of each indicator is conducted by sub-indicators.

Indicators for principle 1. Country ownership:

1. **Development co-operation is predictable (annual and medium term):** Measures the reliability of development partners in delivering development funding and the accuracy of forecast and disbursement of this funding.
2. **Quality of Countries' Public Financial Management (PFM) Systems:** Assesses improvement in key aspects of a country's PFM systems country systems by using selected dimensions of the Public Expenditure and Financial Accountability (PEFA).
3. **Development partners use country systems:** Measures the proportion of development co-operation disbursed for the public sector using the country's own public financial management and procurement systems.
4. **Aid is untied:** Measures the percentage of bilateral development co-operation provided by OECD-DAC members that is fully untied.

Indicators for principle 2. Focus on results:

5. **Countries strengthen their national results frameworks.** Measures whether countries are setting national results frameworks that determine the goals and priorities of their own development and putting in place mechanisms to ensure that these results are monitored and achieved.
6. **Development partners use country-led results frameworks.** Measures the alignment of development partners' programme with country-defined priorities and results, and progressive reliance on countries' own statistics and monitoring and evaluation systems to track results. The indicator is the source for reporting against SDG target 17.15

Indicators for principle 3. Inclusive partnerships:

7. **Civil society organisations (CSOs) operate within an environment that maximises their engagement in and contribution to development:** Measures the extent to which governments and development partners contribute to an enabling environment for CSOs; and the extent to which CSOs are implementing the development effectiveness principles in their own operations.
8. **Quality of Public Private Dialogue:** Measures the quality of public-private dialogue through a consensus-oriented multi-stakeholder process, with a focus on identifying whether the basic conditions for dialogue are in place in the country.

Indicators for principle 4. Transparency and mutual accountability principle:

9. **Transparent information on development co-operation is publicly available:** Assesses the extent to which development partners are making information on development co-operation publicly accessible, and in line with the Busan transparency requirements.
10. **Development co-operation is included in budgets subject to parliamentary oversight:** Measures the share of development co-operation funding for the public sector recorded in annual budgets approved by the national legislatures of partner countries.
11. **Mutual accountability among development actors is strengthened through inclusive reviews:** Measures whether mutual assessment reviews of development co-operation commitments take place at the country level. It examines whether there is: (i) a policy framework defining the country's priorities; (ii) targets for the country and its development partners; (iii) regular joint assessments against these targets; (iv) involvement of local governments and non-state stakeholders in joint assessments; and (v) public availability of the results.
12. **Countries have transparent systems to track public allocations for gender equality and women's empowerment:** Measures whether countries have systems in place to track government allocations for gender equality and women's empowerment and to make this information public. This indicator is the source for reporting against SDG target 5c.

Nevertheless, there are other effectiveness principles suggested by the authors (N. Bird et al., 2013; CGD, 2018). For example, Center for Global Development (2018) suggested the Quality of ODA, which is revised version of aid effectiveness principles, in four themes: maximizing efficiency, fostering institutions, reducing burdens, and transparency and learning. Also, the Overseas Development Institute (ODI)'s report (B. N. Bird & Glennie, 2011; N. Bird et al., 2013) suggested *policy requirement, institutions requirement and public expenditure framework* should be considered regarding climate finance' effective delivery based on the national level of climate finance assessments for various countries including Nepal, Bangladesh, and Indonesia.

2.5.2 Policy framework and institutional capacity

In a broader picture, effective development finance at the national level, depends on *national policy interests* as well as cumulative efforts from developing partners (OECD, 2011). A number of challenges hinder development finance outputs at the national level. The poor effectiveness of development finance may relate to the recipient countries' characteristics. Undermining aspects include the roles of inter alia, institutional quality, civil conflict and war, the nature of the regime, geographical characteristics (e.g. landlocked or small state), degree of vulnerability to external shocks, (e.g. price changes and weather) and Dutch Disease² (UNDP, 2013). On the other hand, the increased performance may have resulted from the *policy framework* of developing countries and their *economic development and social progress* (e.g. increasing share in world trade, reduction of extreme poverty) (UN, 2015a, p. 11, 22.). Development finance has also been recognized for capacity building in developing countries (UN, 2015a, p. 11, 22.). *Building capacity and institutions* is one way to increase the effectiveness of development and climate finance because a root cause of underdevelopment is due to underlying structural conditions and lack of technical know-how (Carothers, 2015).

² Dutch disease is the apparent causal relationship between the increase in the economic development of a specific sector (e.g. natural resources) and a decline in other sectors.

2.5.3 Development goals and results

The researchers (Gutiérrez & Gutiérrez, 2019; Robert, 2018; Tara & Gisela, 2016; Timmons-Roberts & Huq, 2010; Warren, 2019) are sceptical about the effectiveness of development finance, asserting its failure to offer promises because it often overlaps between climate change projects and general development aid, Roberts & Huq (2010) argued. At the same time, ODA commitments can be promoted through public awareness and by providing data on aid effectiveness and demonstrating *tangible results from partner countries*. To increase the national level of efforts, the Agenda (2015) stressed that countries should ensure that they use ODA effectively to fulfill development goals and targets (UN, 2015a, p. 27, 53.). At the project level, a *result-based approach* is recommended by the Clean Technology Fund for Climate Investment Fund (CIF) (Ellis et al., 2013).

2.5.4 M&E and climate finance tools

Many development partners have their own monitoring and *evaluation (M&E) tools*. The Climate Policy Initiative (CPI) summarized key lessons learned across different tools, methods or systems on the effectiveness of climate finance (Chaum et al., 2011). The report (2011) concludes that generally tools and monitoring systems (e.g. M&E) might improve the effectiveness of climate finance. For example, there are range of tools such as ex-ante measurement for GHG emissions, independent evaluation has been used by multilateral donors (e.g. World Bank, ADB, CIF, GEF) in the benchmark to assess the impact of climate finance.

The majority of those tools are appropriate for *intervention or project based analysis* (Ellis et al., 2013). According to the OECD assessment (2013), the most effective intervention for climate mitigation utilized multiple approaches or criteria, including Nationally Appropriate Mitigation Action (NAMA), marginal abatement cost, impact assessments and cost-benefit analysis. Furthermore, monitoring climate-specific results through improving fuel combustion efficiencies or increasing awareness on low-GHG technologies is suggested (Ellis et al., 2013). Therefore, suitable monitoring indicators would be emission intensity (e.g. per GDP or unit of energy), the ratio of renewables to fossil fuels in total supply, installed RE capacity, hectares of deforestation avoided or the number of low-carbon technologies supported (Ellis et al., 2013). Similarly, CPI (2011) also pointed climate specific methods monitored by specific international development banks³: Environmental performance on climate change, climate portfolio and Verified Carbon Standard.

2.5.5 Transparency, budget, and gender equality

Another important effectiveness factor is to increase clarity, predictability and transparency of expected development finance, and the publication of a forward-looking plan in line with the national budget allocation process is encouraged (OECD & UNDP, 2014). Also, countries should track and report resource allocations for gender equality and women's empowerment (UN, 2015a, p. 27, 52.).

Fiscal stability (e.g. debt burdens) is identified as big factor for effective development finance in many developing countries. For example, countries which are dependent on development finance for at least 25% of central government expenditure were Afghanistan, Armenia, Bangladesh, El Salvador, Ghana, Kenya, Kyrgyzstan, Lao PDR, Madagascar, Mali, Mongolia, Nicaragua, the Niger, Togo and Zambia (UNDP, 2013). The remaining challenge is that LDCs could not mobilize more domestic resources for development due to lack of tax collection and

³ EBRD, International Finance Corporation (IFC) and European Investment Bank (EIB).

lack of private investments (FDA & UNDP, 2016), thus many LDCs heavily rely on ODA. Instead, the French Development Agency and UNDP (2016) proposed that LDCs need new financial tools to promote SDGs.

2.5.6 Data transparency and consistency

Tracking development finance is crucial for the policy development and strategy plan. In terms of monitoring and tracking development finance, a challenge emerged from *data transparency and consistency* which also received high importance on climate finance from Article 9.7 of the Paris Agreement, including sectoral classifications (Watson et al., 2018). OECD DAC collects transaction flows of development finance through its vast data platform, the so-called Creditor Reporting System (CSR). However, scholars (Atteridge & Savvidou, 2019; DiLorenzo et al., 2017; Huang & Pascual, 2017) argue that data is limited in terms of consistency and inconvenient for non-specialists. More importantly, the data is incompatible with sustainable development commitments because CRS sectors and subsectors are not easily translated into SDGs. One example of aligning CRS data with SDGs is AidData. These scholars (DiLorenzo et al., 2017) developed a baseline methodology based on the development project descriptions and AidData coding schema. Yet, the AidData does not provide country aspect.

2.5.7 Summary of existing methodologies

It is observed that OECD & UNDP's aid effectiveness monitoring framework extensively covers the majority of factor leading to effective development and climate finance demonstrated by the other researchers in the literature. Nevertheless, these principles of aid effectiveness are undermined by scholars (CGD, 2018; Chaum et al., 2011; Rogner, 2013). Also, knowledge gap of effectiveness principles approach still remains that its methodology is not easily reflect at sectoral level, including energy sector.

2.6 Mongolia: Development finance assessment and aid effectiveness

In Mongolia, development finance had focused on the economic pillar of sustainability, enhancing economic growth and fiscal stability.

According to the UNDP (2018) development finance assessment, Mongolia performs well from an international perspective on development finance, and it receives large volume of ODA per capita by GNI compared to SIDS. Nonetheless, total ODA in Mongolia has declined, especially Germany and Japan significantly reduced ODA disbursements because Mongolia experienced high economic growth from the mining sector up until 2013 leading to upper-middle income country ranking (UNDP & GoM, 2018).

In terms of instruments, ODA grants have reduced in real value, accounting for less than one percent of GDP in 2016, whereas ODA loans showed an increasing trend up to 4 percent of GDP. Despite economic growth, UNDP (2018) pointed that integrated government strategy is lacking in terms of mobilizing ODA because Mongolia has a significant level of total public debt and a poor fiscal position from off-budget borrowing. In this context, the study of Mongolia's Debt Crisis and Impact of the International Monetary Fund (IMF) Program (Bauer et al., 2017) concluded that debt crises was occurred due to unrealistic uexpectations of mineral sector revenue growth, off-budget spending and a plethora of small infrastructure projects. Furthermore, the the implementation of IMF program is aimed to alleviate Mongolia's public debt burden, however there is challenge exists that increasing decline in mineral prices may leads to high level of risk for additional debt repayment (Bauer et al., 2017). Therefore, this also

in line with UNDP (2018) message that the public management system (through effective planning, budgeting and monitoring programs) is still key area that needs to be improved in order to mobilize the development finance effectively and efficiently in the country.

In the context of sustainable development, the UNDP (2018) highlighted a couple of challenges related to M&E, financing framework and data eco-system. This also justifies the knowledge gap that tracking and assessing development finance in the context of sustainable development is essential.

2.6.1 Aid effectiveness in Mongolia

In Mongolia, aid effectiveness monitoring assessed few times (OECD, 2011; UNDP & OECD, 2016) and findings are summarized as follow. Nevertheless, the research gap remains that both reports (OECD, 2011; UNDP & OECD, 2016) did not provide sectoral insight (e.g. energy) and assessment did not cover climate funds which are highly likely to promote RE in developing countries.

The latest country assessment of 2016 and monitoring dashboard for effective development co-operation (UNDP & OECD, 2016; GPEDC & UNDP, 2017) covered over 16 bilateral and multilateral donors, yet it did not include climate funds. Out of 12 indicators of effective co-operation monitoring framework (See above definition and measurement), Mongolia's assessment was conducted for five indicators, mainly finance aspects: (1) use of partner countries' results framework and evaluation processes, (2) annual predictability of planned funding and provision of medium-term information on planned funding (3) funding recorded in partner countries' national budgets (4) use of partner countries' system for disbursing fundings (5) % of aid untied.

In terms of alignment, many development partners (e.g. ADB, UN institutions, World Bank, Australia, Czech Republic, EU Institutions, Japan) said 100% of new development interventions that draw their objectives from country-led results frameworks. In contrast, bilateral donors such as Germany, Canada, Kuwait did not accurately take country-led results framework in the new interventions (GPEDC & UNDP, 2017). Within the new interventions, the analysis (2017) illustrated that donors whose results indicators are aligned with country results framework are UN institutions (e.g. FAO, UNICEF, UNDP), Australia, USA and World Bank. While, other development partners such as EU Institutions, ADB and Japan said that about 50% of results indicators are in line with the country policies (GPEDC & UNDP, 2017).

For predictability of financial flows, the same analysis showed that except the World Health Organization (WHO) and UNICEF, rest of development partners assessed that 100% of funding disbursed as scheduled.

3 Methodology

This section (i) introduces the case study, (ii) presents the overview of research design, (iii) discusses the methods for data collection and process for tracking development finance, further (iv) describes the development of analytical framework, followed by (v) methods of data collection for analytical framework, and (vi) explains the scope, limitations; and (vii) ethical considerations affiliated with this research.

3.1 Choice of Case Study

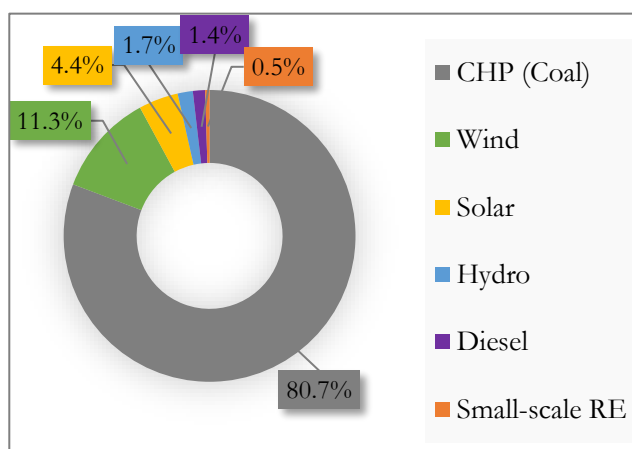
As the aim of the research is to analyze the state of development finance to RE, a case study method is selected because it reveals the holistic and in-depth explanations of the social and behavioural problems (Tight et al., 2016). Furthermore, it allows researchers to go beyond the quantitative analysis and understand the perspectives of different actors (Tight et al., 2016). Most importantly, while the fossil fuel dependent economy causes negative social, environmental and economic impacts (NSO, 2019; WHO, 2019), RE remains highly insufficient in Mongolia (IRENA, 2016; WB, 2017c, 2018b). Therefore, I choose Mongolia and its energy sector to test the aid effectiveness principles found in the literature. Also, the case study method helps to design a framework for analysis that recipient country can use to assess development finance for RE.

3.1.1 Introduction to the Case Study

Mongolia heavily relies on the mining sector which generates 90% of the country's export revenue (WB, 2017b). The economy of the country is highly dependent on the coal industry and therefore the sector receives big support from the Ministry of Mining and Heavy Industry (Weng, 2019). For instance, coal provides one third of the country's export, and historically coking coal has been an integral part of the economy (WB, 2017b). Nevertheless, like other countries, Mongolia is heavily affected by climate change, including severe desertification, water scarcity, extreme weather events, which then negatively impact human health (IKI GIZ, 2020; UNICEF, 2011; USAID, 2017).

Mongolian energy system

Figure 1. Installed electricity generating capacity by source



Source: The Ministry of Energy (ERC, 2019)

Reserves of 173 billion tonnes coal was the driver for fossil fuels representing 95% of Mongolia's primary energy source (IRENA, 2016). In terms of electricity grids, total installed capacity is estimated at 1366MW as of 2019, of which more than 80% comes from coal. Mongolian electricity power system is operated by four independent operating grids: Central Energy System (CES), Eastern Energy System, Western Energy System and Altai-Uliasti Energy system. Of which, CES provides the more than 90% of national electricity supply (ERC, 2019).

Three coal plants operate in the capital city of Ulaanbaatar under the operation of main grid CES. While electricity access is quite high at 98%, only few provinces are supplied through RE sources (IRENA, 2016). The main challenges related to the electricity system are the increasing Russian electricity price as well growing coal power plant demand due to mining sector. Furthermore, low and uncompetitive energy tariffs have hindered investments in RE (UNDP & GoM, 2018). High usage of coal in residential area for cooking and heating led to high level of air pollution and health issues (IRENA, 2016; WHO, 2019). It is estimated that 80% of air pollution of Ulaanbaatar derived from ger district⁴ where households burn roughly 1 million tons of coal, while 10% is from three coal power plants of CES, and residual share is sourced from cars and soil waste (Ochir et al., 2014; CZE PiN, 2019).

By consumption, industry and construction is the biggest sector for energy consumption, accounting for half of total consumption due to large smelters and mining activities (ERC, 2019). Secondly, households utilize about 18% of the consumption. Transmission and Distribution losses are relatively high at 12%, the same as in-plant use. The study (IRENA, 2016) anticipated that the mining sector will remain the driving force of energy demand growth.

3.1.2 RE related policies

Mongolia's commitment for scaling up RE depends on energy and development policy, international commitments (e.g. SDGs, Paris Agreement, NDC). Key policy documents related to RE development are Green Development Policy (2014), Mongolia's INDC (2016, 2019), State Policy on Energy (2015-2030). Depending on each chapter, some additional policies are derived as a reference. Below I summarize the main regulatory and policy documents associated to the RE.

Renewable Energy Law (2007) was enacted by the Parliament in 2007 to stimulate RE investment within two objectives: (i) reference tariffs for RE; and ii) electricity market access rules for grid connected RE projects (Renewable Energy Law of Mongolia, 2007). The law (2007) also was introduced Feed in Tariff (FiT) mechanism in the beginning. The latest two amendments had significant changes.

Amendment of 2015 (Renewable Energy Law Amendment December, 2015): To enhance public-private partnerships and create a market-oriented framework for the energy sector, the Parliament amended the law the two changes: (i) The responsibility of managing the Zero-Balance Account was transferred from the National Transmission Company to the National Dispatching Centre, and (ii) the green surcharges is aimed to recover revenues adequate to pay for new RE systems.

Amendment of 2019: The Law is amended mainly about transition of tariff system from FiT to auction in order to support private participation and investment (Renewable Energy Law Amendment June, 2019)

Green Development Policy is the important policy document in term of RE production. The purpose of the policy is to ensure that Mongolia evolves as a developed nation that has built

⁴ A ger district is a form of residential area occupied by yurts and houses, often households rely on wood or coal burning stoves for cooking and heating.

⁵ The current tariff structure is based on accounting instead of economic principles. There is strict financial terms exist. For example, compared to new RE systems, CHPs are very low cost energy systems (GCF, 2019a):

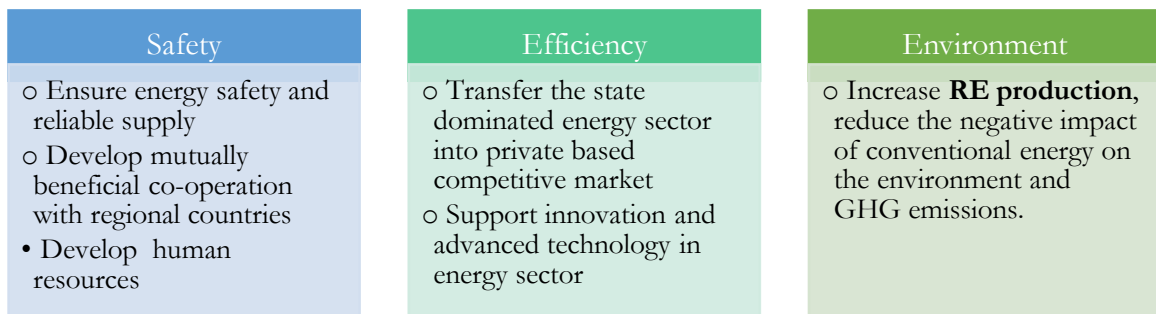
conditions for environmental sustainability, and for long-term, participatory and inclusive economic growth based on the green development concept (GoM STHM, 2014) Its first strategic objective is to promote sustainable consumption and production pattern and that highlights GHG emission reduction in the energy sector and RE development & technology.

Mongolia Sustainable Development Vision as linkage of SDGs, emphasized the increasing share of RE in total energy to 30% by 2030 (GoM STHM, 2016). The vision 2030 set energy goals is to 1) fully meet energy consumption from domestic sources and become an electricity exporter; 2) increase the share of RE in total energy to 30% and start using nuclear energy; and 3) Increase the production of high-tech and innovation and reduce GHG emissions by 14%

Mongolia’s Intended Nationally Determined Contributions (INDC) (GoM, 2015a) to the Paris Agreement on Climate Change defined the clear targets and how RE contributes to. INDC also is planned in accordance with the Green Development Policy and its Action Plan. For example, Mongolia set a target of reducing GHG emissions by 14% by 2030 compared to BAU of 2005. In doing so, the energy sector was identified as the largest contributor of total GHG emissions, followed by agriculture sector. The Government of Mongolia recently updated the INDC (GoM, 2019).

The State Policy on Energy 2015-2030 is an integrated⁶ energy policy in three dimensions – safety, efficiency and environment. Increasing RE production is one of the key priorities under environment dimension

Figure 2. Three dimensions of Mongolia’s State Policy on Energy



Source: Adopted from (State Policy on Energy, 2015)

Since 2015, the policy has been implemented in two stage which incorporate RE development. In terms of RE, increasing installed capacity from RE sources such as hydro (100MW), solar (60MW), wind (100MW) power is targeted in the staged plans.

The first stage between 2015-2023 is about (i) developing energy safety resources and backup capacity (ii) establishing a foundation for RE development (iii) enhancing energy normative documents and legal environment. This also includes a relevant RE objective that hydro will represent at least 10% of the total installed power capacity. *The second stage* 2024-2030 is focused on secondary energy export and sustainable development of RE sector. This compises (i) the goal of increasing share of RE capacity to 30%, (ii) integrated smart energy system connecting regions with high capacity transmission lines; (iii) transition from state-owned power plants to

⁶ Under the Resolution 32 “State Policy on Energy”, Mongolian Parliament unabolished “National Renewable Energy program 2005-2020” and “Mongolian Integrated Energy System program”.

public companies; (iv) distribution will be privatized and energy sector will be worked as a competitive market with regulation; (v) secondary energy will be exported by connecting with Northeast Asian countries with high capacity DC lines.

3.2 Research design

The research design starts with tracking development finance data from the donor side to Mongolia in the context of the energy sector. Following that, in order to enhance the analysis by adding the perspective from the recipient country, Mongolia, a sectoral multi-stakeholder assessment (Wignaraja, 2006) using developed analytical framework (Section 3.4).

The research is conducted with mixed methods for data collection. This includes the review of official documents, finance data, RE project documents and interviews, and descriptions are explained in the following sections. Data sources development partners' development finance data on OECD CRS, Mongolian RE related policy documents, selected project documents, and external assessments (Section 3.5). In addition, primary data collection from interview were collected to support the discussion and data analysis.

In short, in order to answer RQs, the author utilized several methods and assessment as follow. For *RQ1: What is the state of development finance into energy and RE in Mongolia?*

Method: Tracking development finance for RE project in Mongolia (who, what financial instrument, which RE sub-sector?) from donor side

Assessments: Tracking development finance: the state of development finance for RE in Mongolia

For *RQ 2: To what extent is development finance to RE in Mongolia aligned with international and national commitments (e.g. national energy and development plans, INDC, SDG7)?*

Method: Reviewing policies related to RE and assessing RE projects (Section 3.1.2 and 3.5.1)

Assessments: Assessing alignment indicators of effectiveness principles framework (Methodology of building framework is described in the Section 3.4)

- *Indicator 1 for Ownership principle (O1).* Country set country specific RE policy framework and investment needs;
- *Indicator 2 for Ownership principle (O2).* RE interventions are led by country RE policy framework;
- *Indicator 1 for Focus on results principle (R1).* Country set comprehensive RE target setting; achievement of results is in place;
- *Indicator 2 for Focus on results principle (R2).* Results frameworks of RE interventions are aligned.

For *RQ 3: To what extent is development finance for RE in Mongolia aligned with effectiveness principles?*

Method: Assessing impact of development finance (using effectiveness principles framework) (Methodology of building framework is described in the Section 3.4).

Assessments: Overall assessment results of effectiveness principles for development and climate finance to RE in Mongolia

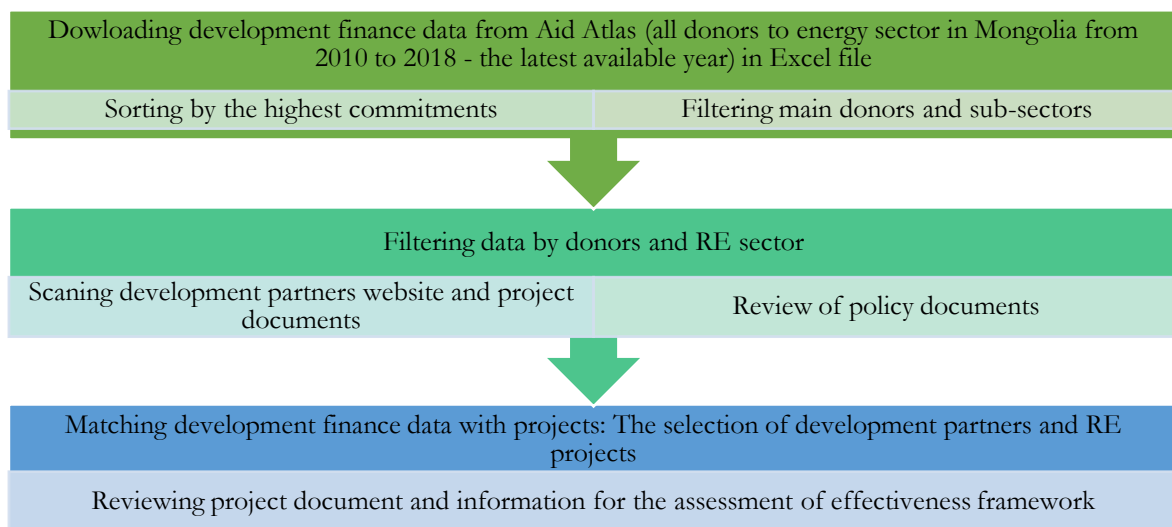
3.3 Methods of data collection and process for Tracking development finance

This section focuses on the state of development finance in energy in Mongolia from the donor side. This is for the preparation of a next-stage assessment that aims to assess the alignment of between donors and Mongolia. In order to track the development finance for RE in Mongolia (first stage), the several tools (Mapping, Scoping and Processing) I used, recommended by the SEI's development finance team (SEI, 2019) and their research methodology.

Mapping development finance to energy in Mongolia. The analysis is focused on the development finance data during the last nine years from 2010 to 2018. This duration covers the expected financial flows to RE under universal agreements and UNFCCC commitments. The analysis covers one country and one sector – Mongolia and its energy sector.

Scoping RE donors and projects. Furthermore, the analysis is focused on the selected donors and attributed RE projects from 2015. The narrowing scope is based on the preliminary findings of development finance to RE to Mongolia. Especially, selected RE project explain the majority of development finance commitment to RE sector in Mongolia between 2015 and 2018 which is the period that the resarch expected to see more alignment on commitments under the international agreements.

Figure 3. Scoping and matching exercise. Selection of development partners and RE projects



As a result of the scoping and matching exercise, 14 donors and 10 projects are assessed further in the section of effectiveness principles. All 10-project information is described in Section 3.5.1. Preliminary finding found that there are 16 donors who has been committed since 2015. Therefore, scope of projects and donors covers majority (85.7%) of development finance to RE in Mongolia. Finland is excluded because there was no project information found⁷, and its commitment recorded as zero in the development finance platform. Also, United Arab Emirates (UAE)'s commitment to Taishir Hydropower project is excluded because it was already out of this research's scope timeline. The project's commitment was made in 2008, where Japan was main donor under the Joint Crediting Mechanism (JCM).

⁷ Is commitment might match with one of the 10 projects. At the moment, it is unclear what project is affiliated by Finland's commitment.

The analysis also included the additional adjustment of the Erdeneburen Hydropower plant that financed by China because it is found in the State Policy on Energy as one of main priority RE projects with the highest investment required from ODA loan (State Policy on Energy, 2015). This also gaps the one limitation of CRS database where China does not report its development finance in the system.

Filtering climate change mitigation activities by using Rio marker: Rio Marker is used to distinguish the development interventions to climate mitigation specific activity (OECD, 2016a). OECD suggested an activity (e.g. energy intervention) should be classified as climate-change-mitigation related hence climate finance, if it is marked as Principal or Significant. Criteria is discribed in the section 2.2. Generally, Principle means energy intervention would not have been undertaken without climate change mitigation objective. Whereas Significant implies apart from mitigation objective, there are other fundamental drivers to design the intervention. Rio Marker for gender objective is further used for the assessment of accountability principle. See Section (iii). Its criteria (Principle and Significant) is same as climate change mitigation.

Data: The analysis is based on the available development finance data in the (CRS) database of the OECD DAC and its visualized version of Aid Atlas developed by SEI. It is chosen because the database is the most comprehensive and accessible data for international development finance flows to developing countries (SEI, 2019; OECD, 2019b, 2019c).

Table 1. RE generation subcategory/ sectors and definition of OECD DAC

RE multiple technologies	Hydro-electric power plants	Solar energy for centralised grids	Solar energy for isolated grids and standalone systems
Renewable energy generation programmes that cannot be attributed to one single technology Fuelwood/charcoal production should be included under forestry.	Including energy generating river barges	Including photo-voltaic cells, concentrated solar power systems connected to the main grid and net-metered decentralised solutions.	Solar power generation for isolated mini-grids, solar home systems (including integrated wiring and related appliances), solar lanterns distribution and commercialisation.
Solar energy - thermal applications	Wind energy	Geothermal energy	Biofuel-fired power plants
Solar solutions for indoor space and water heating (except for solar cook stoves).	Wind energy for water lifting and electric power generation	Use of geothermal energy for generating electric power or directly as heat for agriculture, etc.	Use of solids and liquids produced from biomass for direct power generation. Also includes biogases from anaerobic fermentation ⁹

Source: Development finance standards, DAC and CRS code lists (OECD, 2019b)

The data entails (column in the Excel file): (i) **Year** of development finance transaction made (ii) Name of multilateral or bilietarel **donors** (iii) **Category of energy** sector: (1) energy distribution, (2) energy generation from non-renewable sources, (3) energy generation from renewable sources, (5) energy policy (Further descriptions are explained in the Appendix) (iv) **Sub sectors**

⁸ Excluding marine energy due to case study choice, a landlocked country.

⁹ (e.g. landfill gas, sewage sludge gas, fermentation of energy crops and manure) and thermal processes (also known as syngas); waste-fired power plants making use of biodegradable municipal waste (household waste and waste from companies and public services that resembles household waste, collected at installations specifically designed for their disposal with recovery of combustible liquids, gases or heat).

of energy category (RE generation sub sectors are explained in Table 1 below), Type of **financial instruments** – ODA loan, ODA grants, Equity, Other Official Flows (Description in section 2.1). Furthermore, it contains amount of **commitment** made in USD, amount of **disbursement** made in USD, **project title**, long **description**, **rio marker**, and **untied aid** classification (Untied, tied or partially untied).

OECD (2016b) uses “untied” term whether aid or development finance should be freely available to buy goods and services from all countries (“untied aid”). In contrast, tied aid means aid should be restricted to the procurement of goods and services from the donor country. The third category is “partially untied” if there is formal and informal understanding to the effect between the donor and recipient (OECD, 2016b).

Data processing. After retrieving the raw data from CRS and Aid Atlas, the number of technical activities (e.g. filtering, renaming, converting digits to USD million) and data analyzing tools are conducted in the Excel file. For instance, scoping and matching development finance data with Mongolia’s RE projects is required to search and scan the project document and information. Regarding filtering and summarizing data, a Pivot Table is utilized, which allows creating maps and tables according to the SEI development finance team (SEI, 2019).

3.4 Analytical framework to assess effectiveness principles

As mentioned in chapter 1, the objective of the thesis is twofold. It first aims to develop an analytical framework capable of integrating effectiveness principles (ownership and policy alignment, focus on results, inclusive partnerships, and transparency and accountability), with indicators and criteria that are tailored to RE. An important element in the proposed analytical framework refers to effectiveness.

When bringing together the literature on development and climate finance, effectiveness is defined as an umbrella term that has multiple elements that affect the result from different directions at the national level. To frame effectiveness in an evaluation context, various organisations have first proposed a number of approaches such as aid effectiveness principles and its monitoring framework (OECD, 2008; GPEDC & UNDP, 2017), ODI’s (B. N. Bird & Glennie, 2011) I choose effectiveness principles approach because

1. It does include multistakeholders in the assessment (e.g. donors, recipient, private sector, CSOs, public). Therefore, when I see effectiveness of development finance from an interdisciplinary approach and enabling country development it is assumed that development finance to RE should also enable an environment for RE development at all levels, influencing different groups of stakeholders.
2. It overlaps with many of factors (Section 2.5) identified from the literature, which fall under each effectiveness principles, for example:
 - a. *Policy aspect and alignment:* Policy framework and country driven results-framework (N. Bird et al., 2013; UN, 2015b).
 - b. *Development results:* Tangible results, fulfillment of development goals and targets (Gutiérrez & Gutiérrez, 2019; Robert, 2018; Tara & Gisela, 2016; Timmons-Roberts & Huq, 2010; UN, 2015b; Warren, 2019)
 - c. *Budget and financial aspect:* Budget and fiscal stability, financial system (French Development Agency/UNDP, 2016; UNDP, 2013)
 - d. *Development finance data:* Development finance data consistency and transparency, disbursement, aid untaid (Atteridge & Savvidou, 2019; DiLorenzo et al., 2017; SEI, 2019; Turner & Burgess, 2019)

- e. *Gender aspect*: Resource allocations for gender equality and women's empowerment (UN, 2015a)

There are some missing aspects in the framework including (1) institutional capacity and (2) sectoral insights, therefore the analytical framework has some contribution to cover these gaps. However, challenges arise that principles do not directly reflect on the RE sector, there is some adjustment and hypothetical premises needed for the principles and indicators. Addressing these challenges, the proposed analytical framework is described below. It follows the logic of a) translating aid effectiveness principles to RE sector and b) aligning (or assigning) suitable indicators and criteria under each principle.

1. The first relates to **translating aid effectiveness principles into RE sector**: Based on the internationally agreed principles and their definitions (section 2.5.1) author tailored the definitions for RE sector and premises.
2. The second refers to **aligning suitable indicators (factors) and developing criteria**. Aligning indicators with aid effectiveness principles is conducted in two stages. Firstly, the author chose suitable indicators/factors under each principle as results of literature and development finance concepts by tailoring and editing aid effectiveness indicators into national and RE sector context.

Figure 4. Proposed analytical framework for RE development finance in Mongolia. Ten indicators of the principles.

Principle 1. Ownership and policy alignment (O)

- O1. Country set country specific RE policy framework and investment needs
- O2. RE interventions are led by country RE policy framework
- O3. Development finance strengthens energy governing institutions

Principle 2. Focus on results (R)

- R1. Country set comprehensive RE target setting SDG7, achievement of results
- R2. Results frameworks of RE interventions are aligned

Principle 3. Inclusive partnerships (P)

- P1. Increased public-private partnerships (PPP) & Procuring on infrastructure PPPs
- P2. Inclusive CSOs engagement

Principle 4. Transparency and accountability (T)

- T1. Development finance for RE has been disbursed as commitment
- T2. Development finance (Bilateral) for RE enable procurement without geographical restrictions
- T3. Enhanced Country Policy and Institutional Assessment CPIA (transparency, budget management, gender equality + Rio gender marker)

Principle 1: Definition of **Ownership and policy alignment (O)**: “Partnerships for development can succeed if they are led by developing countries, implementing approaches that are tailored to country-specific situations and needs” (OECD & UNDP, 2016). Its initial definition was described as “countries have more say over their development processes through wider participation in development policy formulation, stronger leadership on aid co-ordination and more use of country systems for aid delivery” (OECD, 2008).

Translated definition of ownership for RE: The Government (GoM) and the MoE define the national RE development goals and design that are tailored to country-specific situations and needs.

Justification: In the literature (Section 2.5.2), it is found that policy framework and institutional capacity are important factors to impact the effectiveness of development and climate finance. For instance, increased performance of development finance relates to *policy framework* of developing countries (UN, 2015a). In addition building capacity of institutions is crucial aspect, suggested by the scholars ODI and United Nations (N. Bird et al., 2013; Carothers, 2015; UN, 2015b). Especially, underdeveloped institutions and lack of technical know-how leads to ineffective ownership of development finance (Carothers, 2015).

Proposed indicators and criteria: Therefore, here the analysis aims to assess ownership principle from policy aspect whether MoE and development partners are aligned with national RE policy, strategies and goals. At the national level ownership is could be shown from national energy policy which outlines its goals, priorities and investment needs. On the other hand, it depends on development partners how they follow the RE policy framework on their RE projects. Ownership is the most comprehensive assessment in this research work because it requires preparation and fundamental analysis based on the collection of policy documents. Additionally, data collection from interviews are added to gather the perception on ownership. Thus, proposed factors/indicators and criteria are:

O1. Mongolia set county specific RE policy framework and investment needs.

This indicator is assessed by simple checking-in (Yes or No) criteria about whether the country RE goals, priorities and investment plans (see the Assessment card below Table 2). It also integrates the World Bank's Regulatory Indicators for Sustainable Energy (RISE)'s RE legal framework question #1 (WB, 2017c)

O2. RE interventions funded by development finance are led by country RE policy framework.

The assessment of the alignment of the RE policy framework is made based on the selected RE projects. Based on different sources (see details in methods for data collection), the author tests the ten RE projects with a total of XX donors. Via interviews, aspects regarding the origin of the projects, their rationalities and how they related to Mongolia's RE policy framework. Therefore, criteria for this indicator includes (see the Assessment card below Table 2):

- (i) RE interventions led or initiated by local private, CSOs or government entities
- (ii) RE interventions are aligned with their objective and rationalities

O3. Development finance strengthens energy governing institutions.

This indicator aims to assess criteria of energy policy commitment, especially the categories related to capacity building for institutions in relation to (1) administrative management, (2) education or training, and (3) energy research. The assessment can be made based on the analysis of the development finance data. Our assumed criteria is that there is increasing trend since for each categories of energy policy commitments since 2014 (see the Assessment card below Table 2).

Additionally, interviewees perspectives in the area of ownership will be collected.

Table 2. Assessment card for Ownership and Policy alignment (O): Indicators and criteria

Indicator	Criteria
O1. Mongolia set country specific RE policy framework and investment needs	Does Mongolia’s RE law allow private sector ownership of RE generation? <i>Yes</i> Satisfactory <i>No</i> Not satisfactory
	Does Mongolia’s State Policy on Energy (i) set goal (s), priorities, targets? (ii) integrate RE target with international commitments (e.g. NDC, SDG7)? (iii) set investment needs/plan? <i>Yes</i> Satisfactory <i>No</i> Not satisfactory
O2. RE interventions are led by country RE policy framework	(i) RE interventions led or initiated by local institutions
	<i>Satisfactory</i> lead by local institutions (e.g. government agencies, local private companies, or local CSOs)
	<i>Some extent not satisfactory</i> not specific, but in co-operation with the local institutions
	<i>Not satisfactory</i> no lead by local institutions
	(ii) RE interventions are aligned with their objective and rationalities
	<i>Satisfactory</i> aligned with RE policy framework and specific goals (e.g. increase RE production, reduction of CO2 emission)
<i>Some extent not satisfactory</i> matches general energy policy framework, not specific RE goals	
<i>Not satisfactory</i> doesn’t match any of RE policy framework	
O3. Development finance strengthens institutions	Development finance commitments for (since 2014) (i) general energy policy and administration has increased? (ii) energy education and training has increased? (iii) energy research has increased? (iv) energy conservation and efficiency has increased? (v) RE related policy has increased? <i>Yes</i> Satisfactory <i>No</i> Not satisfactory
General perception on ownership	Perception from government body, private sector companies and CSOs To what extent does ownership qualify in Mongolia? <i>Not satisfactory, Some extent not satisfactory, Satisfactory</i>

Detailed scoring card for criteria in Appendix.

Principle 2: General definition of **Focus on results (R)** (OECD, 2008) “*Aid is focused on real and measurable impact on development*”. While GPEDC’ (OECD & UNDP, 2014; GEPDC & UNDP, 2017) refined definition is “*development efforts must have lasting impact on eradicating poverty and reducing inequality, and on enhancing developing countries’ capacities, aligned with their own priorities*”.

Translated definition of focus on results for sustainable energy and RE: Development finance to Mongolia for RE should have a lasting impact by reducing GHG emissions and aligning SDG7, furthermore aligned with the national energy priorities.

Justification: To increase the national level of efforts, the Accra Agenda (2015) stresses that countries should ensure that they use ODA effectively to fulfil development goals and targets (UN, 2015a, p. 27, 53.). In this regard, OECD & UNDP (2014) aid effectiveness monitoring compromises two indicators 1) Countries strengthen their national results frameworks and 2) Development partners use country-led results frameworks. In case of RE development, it should be also align with sustainable development goals (SDG7) and climate change mitigation (ESMAP, 2018; Huang & Pascual, 2017; IRENA, 2015; UN DESA, 2019; UNDP, 2000)

Proposed indicators and criteria: This principle has two staged indicators. On the one hand how recipient country is in line with global level goals and results, in particular sustainable energy (SDG7). On the other hand, how development partners are aligned with country driven results framework and goals. Thus, indicators and criteria are devised below.

A results framework is an explicit articulation (graphic display, matrix, or summary) of the different levels, or chains, of results expected from a particular intervention—project, program, or development strategy...Results are typically defined through indicators, which are often, but not always, quantifiable and measurable or observable.¹⁰ (WB IEG, 2012)

R1. Country set comprehensive RE target setting SDG7 & Achievement of RE targets are in place. The country driven energy results framework or indicators is important aspect for alignment so that development partners can deploy the same indicators by aligning the country set goals.

Here the criteria and assessment are developed, inspired by the RISE developed by World Bank, SE4ALL, ESMAP and CIF and Sustainable development's SDG 7.2.1 definition (Ritchie & Mispy, 2018; WB, 2017c). RISE assessment shows a country's policy and regulations in the energy sector within *three pillars of sustainable energy*: Energy access, Energy efficiency and RE (WB, 2017c). In doing so, this assessment only looks at the measurable type of result indicators such as SMART- specific, measurable, achievable, realistic and timely) by using the review of RE policy documents as well as Mongolia's energy statistics of 2019 and NDC 2019. Therefore, criteria are twofolded (see the Assessment card. Table 3):

- (i) The policy set RE targets (RE capacity, RE target for electricity, RE target for district heating and cooling, RE target for transport) and result indicators in measurable and timely manner
- (ii) Achievements of RE capacity, RE target for electricity, RE target for district heating and cooling, RE target for transport are in place as of 2019

R2. Results frameworks of RE interventions are aligned. This is a critical aspect of effective development finance that development partners use in the results framework of Mongolia's outlined energy results framework. Based on the development finance provided by development partners on energy commitments to Mongolia since 2015, the indicator aims to address the share of energy development partners that supports Mongolia's energy priority sub-sectors which can be identified from indicator R1. The result of this indicator can be used as proxy for the alignment of development partners' efforts in promoting low-emission energy development in Mongolia. Furthermore, it aims to assess that how RE projects's alignment with country set RE targets as well as integration of sustainability aspects in the results framework. Thus, criteria for this indicator includes (see the Assessment card. Table 3):

- (i) RE projects set logical or results framework in line with country RE target setting
- (ii) Results indicators and framework are designed in line with SDG 7.2.1 and sustainability pillars

¹⁰ "In some settings, desired outcomes may include changes in organizational or institutional behaviors, which may best be tracked through qualitative data." (WB IEG, 2012)

Table 3. Assessment card for Focus on results (R): Indicators and criteria

Indicator	Criteria												
R1. Country set comprehensive RE target setting, achievements of results are in place	<p>The policy set RE targets (RE capacity, RE target for electricity, RE target for district heating and cooling, RE target for transport) and result indicators in measurable and timely manner</p> <p><i>Satisfactory</i> Specific RE target set with baseline, year and result, M&E</p> <p><i>Not satisfactory</i> Any of above component is missing</p> <p>Achievements of policy targets (RE capacity, RE target for electricity, RE target for district heating and cooling, RE target for transport) and results are in place</p> <p><i>Satisfactory</i> Successful achievement as planned (2020 target is closer to 100%, as of 2019)</p> <p><i>Not satisfactory</i> Under achievement as planned (as of 2019)</p>												
R2. Results frameworks of RE interventions are aligned	<p>RE projects set logical or results framework in line with country RE target setting</p> <table border="1"> <tr> <td><i>Satisfactory</i></td> <td>Measurable results framework or results indicators with M&E</td> </tr> <tr> <td><i>Some extent not satisfactory</i></td> <td>Measurable results indicator, but full results framework and M&E are not publicly available</td> </tr> <tr> <td><i>Not satisfactory</i></td> <td>No measurable result indicators, neither in line with country RE framework, Or No publicly available information or project documents about measurable result framework or indicators</td> </tr> </table> <p>Results indicators and framework are designed in line with SDG 7.2.1 and sustainability pillars</p> <table border="1"> <tr> <td><i>Not satisfactory</i></td> <td>Not aligned, Or No publicly available information or project documents about measurable result framework or indicators</td> </tr> <tr> <td><i>Some extent not satisfactory</i></td> <td>Indirectly aligned (e.g. energy efficiency)</td> </tr> <tr> <td><i>Satisfactory</i></td> <td>Fully aligned</td> </tr> </table>	<i>Satisfactory</i>	Measurable results framework or results indicators with M&E	<i>Some extent not satisfactory</i>	Measurable results indicator, but full results framework and M&E are not publicly available	<i>Not satisfactory</i>	No measurable result indicators, neither in line with country RE framework, Or No publicly available information or project documents about measurable result framework or indicators	<i>Not satisfactory</i>	Not aligned, Or No publicly available information or project documents about measurable result framework or indicators	<i>Some extent not satisfactory</i>	Indirectly aligned (e.g. energy efficiency)	<i>Satisfactory</i>	Fully aligned
<i>Satisfactory</i>	Measurable results framework or results indicators with M&E												
<i>Some extent not satisfactory</i>	Measurable results indicator, but full results framework and M&E are not publicly available												
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<i>Not satisfactory</i>	Not aligned, Or No publicly available information or project documents about measurable result framework or indicators												
<i>Some extent not satisfactory</i>	Indirectly aligned (e.g. energy efficiency)												
<i>Satisfactory</i>	Fully aligned												

Detailed scoring card for criteria in Appendix.

Principle 3: The definition of Inclusive partnerships: “Sustainable development depends on the participation of all stakeholders and benefits from the diversity of roles and complementarity of contributions” (OECD & UNDP, 2016).

Translated definition of (P) inclusive partnerships for RE: Advancing RE development in Mongolia also depends on the participation of private sector and CSOs.

Justification: Effective development finance should also pay attention to the inclusive partnerships with private sector and CSOs (OECD & UNDP, 2014). Ultimately, development finance is about creating a positive impact on society as a whole, hence inclusive policymaking and programming ensure participation of CSOs and private contributions in the RE development. GPEDC aid effectiveness monitoring (GPEDC & UNDP, 2017) includes two indicators within the inclusive partnership: 1) *Civil society organisations (CSOs) operate within an environment that maximises their engagement in and contribution to development:* and 2) *Quality of Public Private Dialogue.*

Proposed indicators and criteria: The assessment of following indicators RE sector also qualify inclusive decision making and consultation of the RE projects to ensure participation of civil society organisations (CSOs) and private sector is essential.

P1. Increased public-private partnerships (PPP) and Procuring on infrastructure PPPs. Effective development finance should contribute to the promotion of private sector engagement through public-private dialogue. This is likely to increase investment commitments of public-private partnerships to energy infrastructure projects in Mongolia. The chosen sub-indicator of World Bank’s “PPP investment in RE” in Mongolia, will be taken as evidence of the private sector investment commitments. Criteria for this indicator is based on the assumption that there is increased PPPs projects since 2014 (See the Assessment card below Table 4). Moreover at the country level, World Bank’s benchmark on “Procuring on Infrastructure PPPs” is suitable sub-indicator that assessment shows gaps in an effort to enable better infrastructure service (e.g. RE technologies) delivery and develop better PPP procurement (WB, 2020).

P2. Inclusive CSOs engagement. One factor of inclusive partnership is the engagement of civil society organisations (CSOs) that operate with an environment that maximizes their engagement in and contribution to a low-carbon energy development in the country. Criteria for CSOs engagement is divided into two areas: (i) consultation with CSOs in the design, implementation and monitoring of RE interventions and policies, and (ii) enabling environment of energy CSOs with information, financial support as well as co-operation of other CSOs (See the Assessment card below Table 4). This can be approached from existing CSOs in the context of energy, climate and environment from the MoE, as well as the review of official documents from energy projects funded by development finance, in which direct identification of CSO inclusion can be identified. Interview with MRIA, ERC and XacBank are the main practitioners for the data collection to address this indicator.

Table 4. Assessment card for Inclusive partnerships (P): Indicators and criteria

Indicator	Criteria
P1. Enhanced Public-Private Partnerships (PPPs)	<p>PPP projects in RE infrastructure have increased since 2014</p> <p><i>Not satisfactory</i> Decreased or no increase</p> <p><i>Some extent not satisfactory</i> Increased number of PPPs projects</p> <p><i>Satisfactory</i> Constant increased number of PPPs projects</p> <p>Assessment of procuring infrastructure PPPs (Preparation of PPPs, Procurement of PPPs, PPP contract Management, Unsolicited Proposals)</p> <p>If the scoring is</p> <p><i>Satisfactory</i> $x \geq 67$</p> <p><i>Some extent not satisfactory</i> $33 < x < 67$</p> <p><i>Satisfactory</i> $33 \leq x$</p>
P2. Inclusive CSOs engagement	<p>Consultation of CSOs in the design, implementation and monitoring of RE interventions and policies</p> <p>(i) Government bodies (e.g. MoE) consult CSOs in the design of energy policy and strategies</p> <p>(ii) Government bodies (e.g. MoE) consult CSOs in the SDG7 design and implementation</p> <p>(iii) Private entities consult CSOs in the design, implementation and monitoring of RE projects</p> <p>(iv) Development partners consult CSOs in the design, implementation and monitoring of RE projects</p> <p><i>Not satisfactory</i> No consultation</p> <p><i>Some extent not satisfactory</i> Occasional</p> <p><i>Satisfactory</i> Regular and institutionised</p> <p>Enabling Environment for CSOs in the context of RE</p>

	<i>Not satisfactory</i>	No financial and information support, no other CSOs coordination
	<i>Some extent not satisfactory</i>	Lack of information, financial support and other CSOs coordination
	<i>Satisfactory</i>	Regular financial and information support, other CSOs coordination are in place

Detailed scoring card for criteria in Appendix.

Principle 4: General definition of Transparency and Mutual accountability (OECD & UNDP, 2016): “Development co-operation efforts are transparent and accountable to all relevant stakeholders, including all citizens”

Translated definition of (T) Transparency and accountability for RE: Effective development finance to RE can enable the expected financial flows and enhance the public sector, while increasing gender equality.

Justification: Another important factor for effectiveness is to increase clarity, predictability and transparency of expected development finance, and the publication of forward looking plan in line with national budget allocation process (OECD & UNDP, 2014). Also, countries shall track and report resource allocations for gender equality and women’s empowerment (UN, 2015a, p. 27, 52.). *Fiscal stability* (e.g. debt burdens) is identified as another important factor for effective development finance in many developing countries in the literature (UNDP, 2013).

The proposed indicators and criteria. Selected indicators include disbursement ratio, untied aid, and CPIA three ratings 1) Transparency, accountability and corruption in the public sector 2) Quality of budgetary and financial management, and 3) Gender equality. To gap the sectoral impact of CPIA ratings, inputs from interviews and desktop research were added in terms of RE. In case of gender equality, Rio Marker also used to show how donors report gender objective in their RE intervention (See the criteria in the Sections 2.2 and 3.3).

T1. Development finance for RE has been disbursed as commitment. It is an important indicator of effective development finance from an implementation point of view. It means that fundings for RE have been approved or paid out successfully as commitment (SEI, 2019). According to OECD disbursement of development finance can take several years to disburse (OECD, 2019c), hence the proposed criteria that there is increased disbursement ratio between 2015-2018 compared to disbursement ratio of 2010-2014.

T2. Bilateral development partners enable RE procurement without geographical constraints (untied). OECD DAC address untied aid as one way to improve effectiveness of development partners’ efforts (OECD, 2019d). It is evidenced that untying aid can avoid the unnecessary costs and offers freedom to procure without geographical constraints by reducing transaction cost hence increase the aid effectiveness (Clay et al., 2009; OECD, 2019d). Hence the proposed criteria for this indicator, whether development finance to RE is untied, partially untied, or tied (See the Assessment card below Table 5). The criteria for three sub-ratings at the country level is that there should be increased performance since 2014.

T3. Enhanced Country Policy and Institutional Assessment (CPIA). It is found that well-performing public sector can enable development finance transactions in an efficient, effective and sustainable manner (WB, 2012; ADB, 2014). Here the assessment is focused on the World Bank’s CPIA for the assumption that this can also be a proxy for the assessment of the institutionalisation and robustness of the MoE.

- (i) In terms of *quality of budgetary and financial management ratings*, it reveals the level of effective financial management systems through Mongolia’s Policy and Institutional Assessment (CPIA) that includes timely and accurate accounting, fiscal reporting and audited public accounts, essentially effective budgetary to all ministries (i.e. MoE).
- (ii) Rating of *transparency, accountability and corruption in the public sector aims* to assess the extent to which the executive can be held accountable for its use of funds and for the results of its actions by the electorate and by the legislature and judiciary (WB, 2019b).
- (iii) While the rating of *gender equality* assesses whether the country has established institutions and programs to enact laws and programmes to promote access among both men and women in terms of education, health, economic and social protection (WB, 2019a).

Table 5. Assessment card for Transparency and accountability (T): Indicators and criteria

Indicator	Criteria
T1. Disbursement against commitments in the RE development finance	Disbursement ratio of 2010-2014 has been increased comparison to the period between 2015-2018 Yes <i>Satisfactory</i> No <i>Not satisfactory</i>
T2. Untied RE development finance	Bilateral development partners enable RE energy procurement without geographical constraints (untied) Untied <i>Satisfactory</i> Partially untied <i>Some extent not satisfactory</i> Tied <i>Not satisfactory</i>
T3. Transparency, accountability, budgetary management and gender equality	(i) Rating of quality of budgetary and financial management has increased since 2014 (ii) Rating of Transparency, accountability and corruption in the public sector has increased since 2014 (iii) Rating of Gender equality has increased since 2014; Rio Marker for gender Yes <i>Satisfactory</i> No <i>Not satisfactory</i>

Detailed scoring card for criteria in Appendix.

Summary of assessment method: Each principle and indicator have different criteria and benchmark depending on the nature of selected indicators. However, overall assessment of each principle will be assessed by the *traffic light* system: If the score is $33 \leq x$ “red light” – meaning not satisfactory or ineffective, “yellow light” $33 < x < 67$ – not satisfactory given the criteria and some improvement is needed, and “green light” $x \geq 67$ means it satisfies the criteria and hence can be effective within the level of assumption.

3.5 Methods of data collection for Alignment and Analytical framework

In addition to quantitative data of development finance the author also collected number of qualitative data from policy (see)and project documents, external assessment and interviews.

3.5.1 Project information

RE related projects funded by development partners were selected as part of results of tracking development finance to RE that matched to the CRS data (See Section 3.3).

China: *Erdeneburen Hydropower plant* (EHPP) is 64MW hydropower plant project, commissioned by the Government of Mongolia to enhance the stability of energy system in the

Western Region of Mongolia, and reduce the dependency of imported energy from Russia. The project is funded by the Chinese Exim Bank¹¹ (EHPP, 2018; MoE, 2017a). The project implementation is planned from 2019-2024.

EBRD, Japan: *Tsetsii Wind Farm* project, 50MW wind farm, is to be constructed in Tsogttsetsii soum, in the South Gobi region of Mongolia (EBRD, 2016; Newcom, 2016). The project will be the second wind energy project developed in Mongolia, after 50 MW Salkhit Wind Farm project (EBRD, 2016; Newcom, 2016). It aims to reduce Mongolia's carbon intensity and reduce the increasing power demand. Furthermore, it has an objective that strengthen the private sector presence in the energy sector in Mongolia (Newcom, 2016).

CIF, ADB, World Bank, Germany¹²: *Upscaling RE project* aims to support deployment of 41.5MW distribute RE systems in remote areas in Western Mongolia and Altai-Uliastai, it will be implemented from 2018 to 2023. The project also intends to enhance capacity of local public utilities in investment planning, project management, and grid control for sustainable RE upscaling in the targeted region. (ADB, 2018.; IEE GmbH, 2018). The components of RE includes (i) 10MW Wind in Umnugobi, (ii) 10MW Solar PV in Govi Altai, (iii) 5MW Solar PV and battery in Uliastai, (iv) Hybrid in Altai soum, (v) 10 MW Solar PV in Murun, (vii) 5MW Wind in Salkhit Khutul, and (viii) Shallow Ground Heat Pumps.

EBRD, EU, Denmark: *Sainshand wind farm* is 55MW wind park, developed by Sainshand Salkhin Park LLC was established in 2009. The wind farm is located in Sainshand City, capital of Dornogobi Province, 460km far from the capital city of Mongolia. The project aimed to contributes to greener economy with a potential reduction of more than 200 thousand tons of CO₂emissions per year, and its construction has started in 2017 (EBRD, 2017; Sainshand Salkhin Park LLC, 2016). The power plant has started the operation in 2018.

ADB: *Strategy for Northeast Asia Power System Interconnection (NAPSI)* is strategy project in exporting clean power from Mongolia to NAPSI. Under the project, it has set of studies covering the next 20 years regarding RE, energy market and grid developments for supporting Mongolia in the NAPSI discussion. The study was coordinated by Electricite de France with NovaTerra in co-operation with several tink tanks¹³ and utilities in China, Korea, Japan, Russia and UNESCAP (ADB, 2017; NovaTerra, 2019).

Korea: *Eco-friendly Town Development Project in Mongolia* is funded by South Korea to increase utilization of RE sources, such as solar and wind power (KDS, 2019; MK매경닷컴, 2018). The project furthermore to contribute at transforming former sewage disposal plants, landfill and other polluted areas into RE power plants. The Korea Institute for Advancement of Technology (KIAT) is the main coordinator from South Korea side.

World Bank: *The Ulaanbaatar Clean Air Project* (WB, 2019c) was initiated to complement past and ongoing efforts undertaken by the GoM and development partners to achieve air pollution

¹¹ EHPP (2020) According to the Government Resolution No. 160 of May 30, 2018, the Government of the People's Republic of China will provide USD 1 billion to the Government of Mongolia. The source of funding was decided by including the "Construction of Erdeneburen HPP" project in the list of projects to be implemented with a consensual loan.

¹² In the CRS (OECD DAC database) Germany's commitment was – Renewable Energy Programme I. Matching exercise found that there was cooperation for Upscaling RE project (IEE GmbH, 2018) through Technical Assistance from Integration Environment and Energy GmbH (Germany) (IEE GmbH, 2018).

¹³ The State Grid Energy Research Institute Co., China Electric Research Institute, Hanzhou Dianzi University, the Korea Electric Power Corporation, the Korea Energy Economics Institute, the Renewable Energy Institute (Japan), ROSSETI (Russia), and international organizations - International Renewable Energy Institute, Energy Charter, and UNESCAP.

reduction goals. The project was approved in 2012 with an International Development Association credit of USD 15 million equivalent. Its development objective is to enable ger areas to access electronic heating appliances producing less particulate matter (PM) emissions as well as to develop medium-term PM abatement estimation in Ulaanbaatar with development partners' co-operation (WB, 2019c).

GCF: *Renewable Energy Program #1 – Solar* was implemented by XacBank LLC, GCF's accredited entity in 2017 (XacBank, 2017b). The project is in line with Mongolia's stated goal of a 14% reduction in total national GHG emissions (INDC) by installing additional solar-grid power plant in Southern Mongolia (XacBank, 2017b).

Czech Republic: *Improvement of the reliable electric supply in Mongolia* is the project which aimed to improve the power source for Domogt Shariin Gol Forest Nursery by installing additional solar panels, batteries and control units (CZE, 2017).

UNDP, GEF: *NAMA in Construction Sector* is developed by UNDP with the co-operation of GEF (UNDP, 2016). The project's main objective was transforming energy efficiency in the construction sector by the implementation of NAMA in Mongolia, to do so it aims to remove barriers to increased adoption of energy efficient technologies in the construction sector (UNDP, 2016).

3.5.2 Interviews

A list of participants was selected following a snowball sampling method as well as the result of development finance data. A total of three interviews were made with representatives from government official, private entities and CSOs (Interview protocol can be found in Appendix, page 83). All the interviews were conducted online via virtual calling tools such as Zoom and Facebook messenger. Example of a follow-up email is described in Appendix). Questionnaires and topics were prepared in the web-based tool and sent to interviewees via email in advance (Appendix). Interviews were done in a semi-formal and unstructured way with open-ended questions and these were followed up based on the interviewee's responses.

Stakeholders were selected based on the analytical framework. All three stakeholders addressed four distinct principles. Table 6 below provides the contribution of each stakeholder.

Table 6. Contribution for principles by interviewees

Category	Company	Ownership	Focus on Results	Inclusive Partnership	Transparency and accountability
Government official	Ministry of Energy, Energy Regulatory Commission (ERC, MoE)	+	+	+	+
Private sector/ Accredited entity	XacBank LLC (XB), Green Climate Fund (GCF)'s accredited entity	+	+	+	+
CSOs/NGO	Mongolian Renewables Industries Association (MRIA)	+	+	+	+

3.6 Scope and Limitations

Scope of the thesis is focused on development finance to energy and RE in Mongolia, though the choice of the case study has disadvantages such as lack of rigour and little basis for scientific generalisation (Tight et al., 2016).

There are a couple of limitations for data collection and the limited choice of factors in the framework. For instance, the analytical framework does not include all the factors identified in the literature; instead, it selected the major ones which may improve the effective climate finance in the context of RE. Moreover, there is a limited contribution from conducted interviewees. For example, findings of three interviews (ERC, XacBank and MRIA) are designed to cover all principles in this research.

Limitation of data in the CRS may be related to different types of error or inaccuracy either due to funders reported different data with different degrees of disaggregation to the CSR or due to CSR codes structured as not bright regarding the aim of financial support (Atteridge & Savvidou, 2019; SEI 2019). Development finance data is limited by donors (All donors: 30 DAC members, 25 non-DAC members, 63 multilateral donors, 35 private donors). Therefore, it lacks in terms of reporting South-South development co-operation (e.g. India).

Selected RE projects funded by development partners including climate change funds is scope is covered period post-2014 (baseline) when Mongolia has committed to national and international development agenda, this will give a direction of readiness and overall effectiveness about development finance – enabling environment for RE development in Mongolia. Also, preliminary finding shows that since 2015, there is significant transaction growth in RE generation.

3.7 Ethical considerations

The research design has been reviewed against the criteria for research requiring an ethics board review at Lund University and has been found to not require a statement from the ethics committee.

In terms of methodology, interviews rely on the respondents' subjective experiences. All interviewees were informed of the scope of the research project and interview questions were sent either in document or summary notes through email (see Appendix 3). Explicit consent for recordings was sought, and interviewees were asked to include their names or to be anonymous. Informed consent of quotes sent by email in order to ensure the data could be used and received confirmation of using names or anonymous (See the email templates and interview protocol on Appendix 3). All interview recordings were stored in the author's computer and phone, then some transcripts were saved in the author's one-drive folder. An external agency, the Stockholm Environment Institute (SEI)'s international development finance team supported with the development finance data. The research internship was voluntary and free from coercion. There was no conflict of interests.

Transparency is an essential characteristic of development and climate finance, therefore by exposing the flow of development and climate finance (which is already available in the OECD CRS database and SEI's Aid Atlas) and analyzing its impact and effectiveness should not be harmful to either provider or recipient countries. One side effect would be related to the potential impact of my recommendations that funds should be used in a specific manner.

4 Results & Analysis

4.1 Tracking development finance: The state of development finance to energy and RE in Mongolia

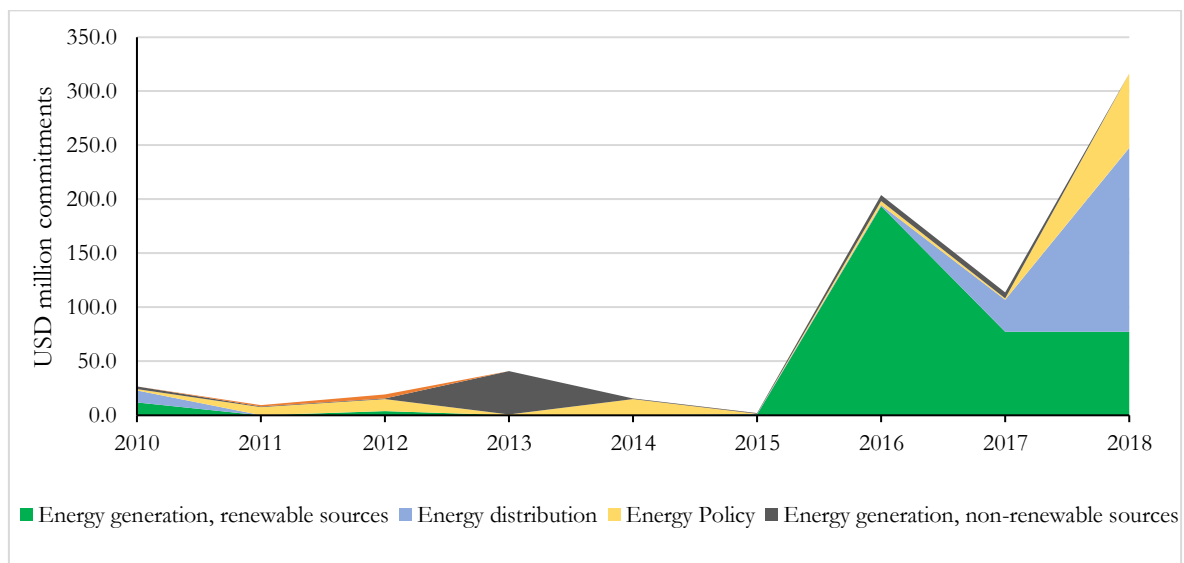
After data analysis of data on development finance to Mongolia since 2010, the result of tracking development finance to energy and RE is demonstrated below.

4.1.1 Development finance commitments for Energy

Development finance commitments to Mongolia for Energy came from both multilateral and bilateral donors as shown in the Figure 4. From 2010 to 2018, all development partners worldwide committed total USD 748,83 million in development finance for Mongolia's energy. Of that, the largest amount half (48.9%) was provided in the form of ODA loans and 38.8% was provided as other official flows (non-export credits) followed by 10.9% of ODA grants and 1.3% of equity investment. The largest amounts were USD 158,31 million from Korea, USD 112,62 million from Asian Development Bank (ADB) and USD 104.88 million from Japan.

In terms of sub-sector targeted, between 2010 and 2014, Aid Atlas data (SEI, 2019) suggested that development finance to Mongolia for the energy sector was provided to coal power plants, energy policy and administrative management, and some RE – wind and solar (Overall visualisation in the Appendix).

Figure 4. Development finance to energy in Mongolia by sector, 2010-2018



Source: Created by Author, data based on OECD DAC CRS, Aid Atlas (SEI, 2019)

Furthermore, the largest commitments were \$41.23 million to coal-fired electric power plants for the Ulaanbaatar Thermal Power Plant No4 Optimization Project from Japan. In terms of energy policy and administrative management there were several instances of development assistance including the energy efficiency program from Germany, Ulaanbaatar Urban Services and Ger Areas Development Investment Program from ADB, Rehabilitation of Water and Heat Supply Substations in Ulaanbaatar City from Korea. The United States financed windpower in the MCC Energy and Environmental Project.

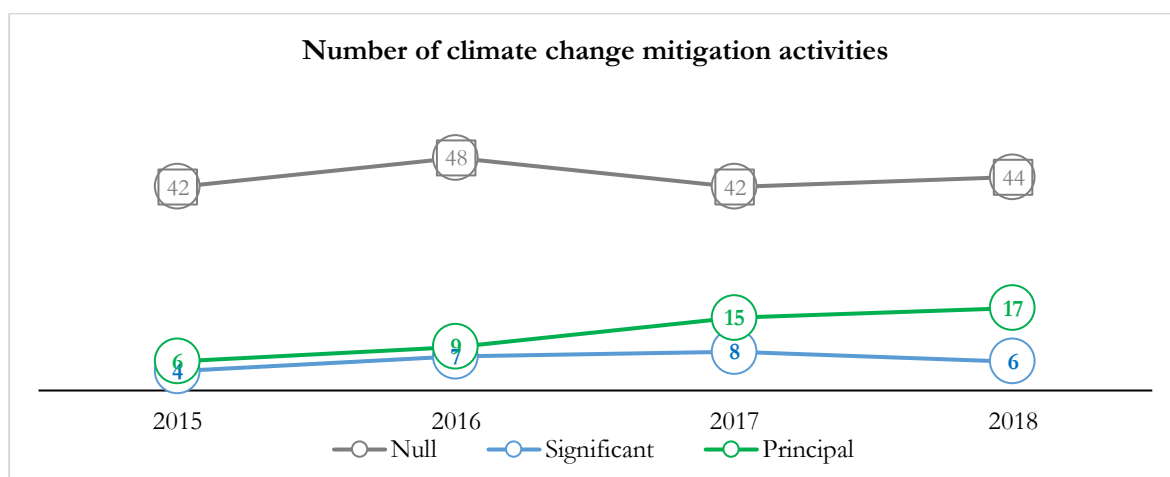
Since 2015, there was significant transition towards renewables and district heating and cooling (Overall visualisation in the Appendix). For example, the largest commitments were \$147.9 million to District heating and cooling, \$139.27 million to Solar energy for centralised grids and \$111.36 million to Energy generation, renewable sources - multiple technologies (SEI, 2019).

4.1.2 Climate change mitigation activities

The analysis of Rio marker for Climate Change Mitigation Activities for energy in Mongolia implies that there was slow progress for energy until 2015. Since then there is significant increase for principal activities in 2017 and 2018, shown in the figure below.

A Joint Crediting Mechanism (JCM) was established in 2013, under the bilateral document on the “Low carbon development partnership” between Japan and Mongolia since then there are 17 partners partnered through JCM as of 2018 (MET ECF, 2018). According to Ministry of Environment and Tourism (MET), JCM is in line with NAMA and Copenhagen Accord, and is particularly important for Mongolia’s transition towards a low-carbon economy as well energy effectiveness by reducing GHG emissions and introducing environmentally friendly technologies.

Figure 5. Rio Marker for Climate Change Mitigation activities for energy in Mongolia from 2015-2018

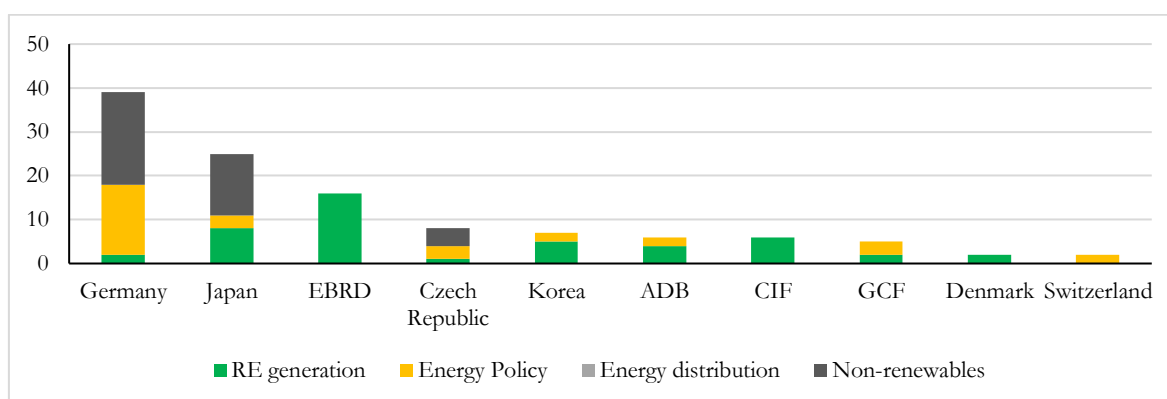


Source: Created by Author, data based on OECD DAC CRS, Aid Atlas (SEI, 2019).

Note: Null = if the activities have not been assessed, then the marker should be empty.

By donors, German, Japan and EBRD have been top three donors by promoting mitigation activities through RE deployment and energy efficiency projects between 2015 and 2018 (See Figure 6). RE generation and energy policy received the most significant number of mitigation activities from all donors, and rest of mitigation support was for non-renewable sourced energy generation in Mongolia. For example, Germany has been supporting a couple of including non-renewables (e.g. energy efficiency in coal power plants), energy policy and RE generation, whereas EBRD, CIF, Denmark are fully committed to RE generation as mitigation activities.

Figure 6. Top 10 donors for climate change mitigation, by number of activities, 2015-2018



Source: Created by Author, data based on OECD DAC CRS, Aid Atlas (SEI, 2019)

4.1.3 Development finance commitments for RE generation

RE related commitments made by funders have been growing significantly since 2015. Together with China, there are 16 development partners/donors committed to Mongolia's RE development (Top 10 are shown in below Table 7).

The share of total bilateral and multilateral donors in RE is almost equal. Most importantly, majority of top RE donors are also appeared in the Rio Marker donors for climate change mitigation (See section 4.1.2 and Figure 6). Multilateral donors are World Bank, EBRD, ADB, UNDP, EU institutions and three climate funds including CIF, GCF, GEF. Also, there are a couple of bilateral donors: China, Japan, Korea, Germany, Denmark, Czech Republic, Finland, United Arab Emirates (UAE). Several countries dropped from the list of Mongolian energy donors compared to the period between 2010 and 2014, such as Netherlands, United Kingdom and United States.

Findings also showed that China's commitment was an important addition given that the amount of the loan is significant as well as a hydropower plant being one of the priorities in the RE policy framework. This is also a clear example of South-South co-operation.

Table 7. Top 10 donors for RE generation in Mongolia, ranking by the amount of commitments

Donors, 2010-2014			Donors 2015-2018	
1	United States	Wind	China¹⁴	Hydro
2	United Kingdom	RE multiple	World Bank	RE multiple, Solar for grids
3	World Bank	RE multiple	EBRD	RE multiple
4	Germany	RE multiple	Japan	RE multiple, Wind
5	Japan	Solar for grids, RE multiple	ADB	Solar for grids, Wind, Geothermal, Hydro
6	UNDP	RE multiple	CIF	Solar for grids, RE multiple
7	ADB	Hydro	GCF	RE multiple, Solar for grids
8	Korea	Solar for grids	EU Institutions	Wind
9	Kuwait	Hydro	Denmark	Wind

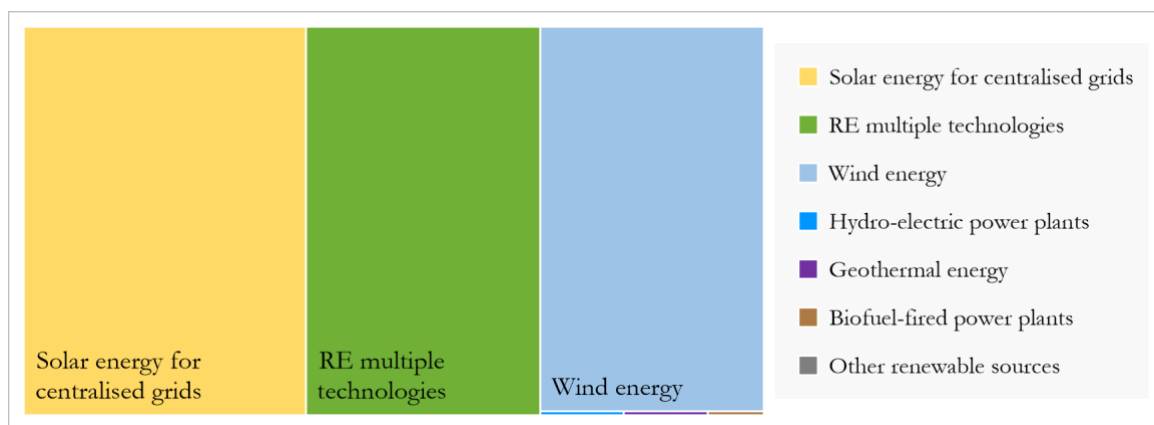
¹⁴ Commitment is converted to USD 264 million (EHPP, 2018)

10	Netherlands	RE multiple	Korea	RE multiple, Biofuel, Solar for grids
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Source: Created by Author, data based on OECD DAC CRS, Aid Atlas (SEI, 2019) + China's commitment on Erdeneburen hydropower project.

In terms of type of RE generation, hydropower received the largest commitment as a result of China's commitment to the Erdeneburen hydropower plant which lifted the share of hydro in development finance significantly. The second and third largest share of development finance mobilized to solar and wind energy. However, geothermal and biofuel received a negligible amount of commitment from development partners. Apart from the marine energy¹⁵, other sub sectors in the classification of OECD CRS database are "solar-energy thermal applications" and "solar energy for isolated grids and stand systems" and both classifications look like haven't received consideration from donors. However if we look at the RE project description, there are some projects under the RE multi technologies and others which have components of solar thermal and stand-alone systems such as the Czech Republic's improvement of the reliable supply in Mongolia, Korea's Eco-friendly Town Establishment, and GCF's MSME Business Loan Program for GHG emission reductions, and WB's Ulaanbaatar Clean Air project. Therefore, there is some data filling inconsistency between CRS classification and development partners given that development partners selected "multi RE technologies and others" rather than a specific classification. Other types of RE projects under the RE multi technologies and others include technical assistance (TA) and technical co-operation (TC) and NAMA in construction sector.

Figure 7. RE related development finance to Mongolia, 2015-2018 by sub-sector and type



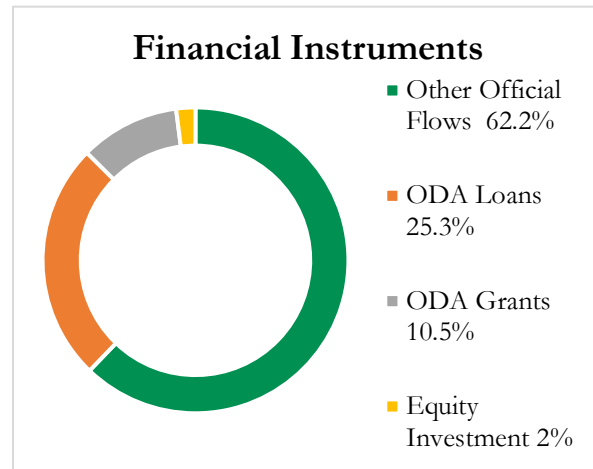
Source: Created by Author, data based on OECD DAC CRS, Aid Atlas (SEI, 2019)

¹⁵ since Mongolia is landlocked country, marine energy is irrelevant.

4.1.4 Financial instruments, disbursement ratio and untied aid

Financial Instruments. In a bigger picture, it is important that ODA loans should not add burden to the recipient with an unsustainable level of debt. The finding shows that development partners who are mobilizing RE funding in the form of other official finance (OOF) had significant amount between 2015 and 2018, compared to loan and grants. According to OECD categorisation, other official flows include subsidies (grants) and funds to support private sector investments (loan). Some providers like ADB, World Bank, EBRD and GCF are the ones which highly support OOF in RE sector in Mongolia, meaning private sector organizations through loan and grant rather than the government facilities.

Figure 8. Financial instruments of development finance for RE in Mongolia, 2015-2018



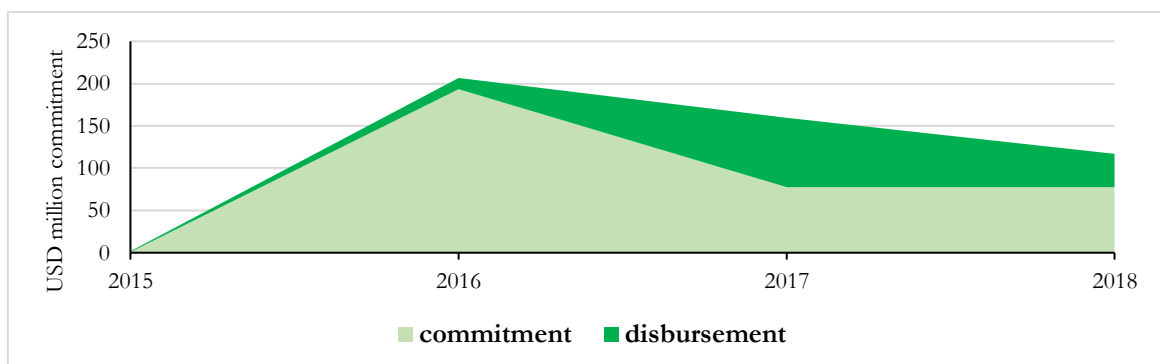
Source: Created by Author, data based on OECD DAC CRS , Aid Atlas (SEI, 2019)

The MoE reaffirms that the current under development project are all foreign invested projects, mostly loans (I1 ERC, MoE).

“More recently, there have been a number of development projects in the western region with mixed financial instruments of grants and credits. It aims to provide reliable energy and green energy to the region, which don’t have purpose of making profits. There are no big projects that have been implemented with grants yet” (I1 ERC, MoE)

Disbursement ratio of development finance tells approved funding for energy in Mongolia should be paid out successfully (i.e. disbursed, actual expenditures). Regarding the hypothesis of this indicator, low disbursement ratios could indicate that there could be challenges in that energy funding was subsequently re-directed after approval. Between 2010 and 2014, ratio of commitment and disbursement was 1.56, meaning that there was less commitment, but actual financial flow was high. However, since 2015, there is a large volume of commitment made by development partners to Mongolia’s RE generation; but disbursement ratio has been declining.

Figure 9. Development finance for RE, commitment vs disbursement between 2015-2018



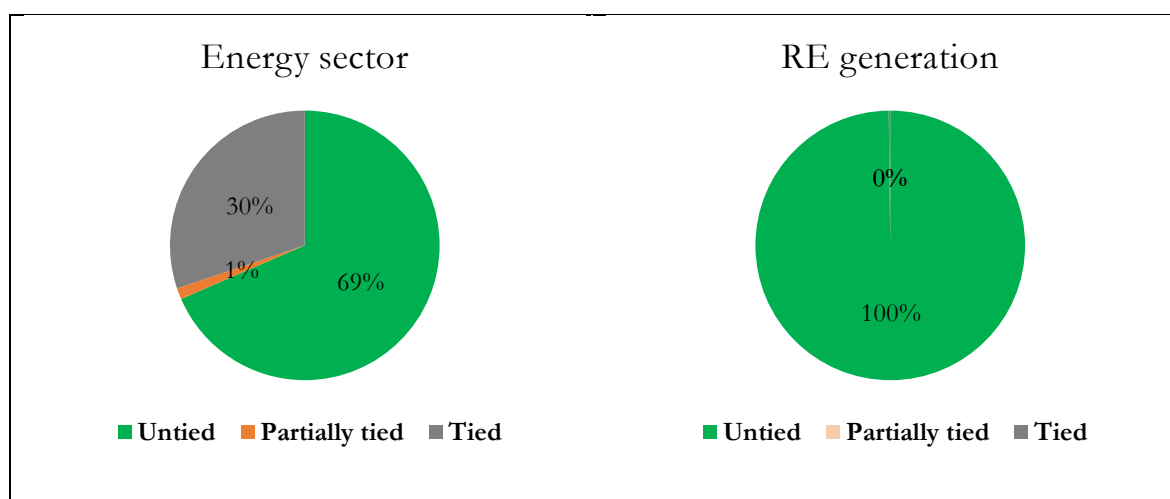
Source: Created by Author, data based on OECD CRS , Aid Atlas (SEI, 2019)

The analysis shows that 30% of development finance for Mongolian energy sector was tied between 2010 and 2018, while 69% percent were untied and 4.8% were partially untied.

Untied aid. OECD (2019) explained “tied aid” as development partners placing geographical restrictions on where the funds can be spent, meaning that limited suppliers in the stated locations (e.g. country of development partners) can bid on procurement of goods and services. The analysis shows that 30% of development finance for Mongolian energy sector was tied, while 69% percent were untied and 4.8% were partially untied.

For RE sector, reported activities are fully untied; in other words, RE development partners did not set geographical restrictions on where the funds can be spent so there was fair competition among suppliers. However, it is important to note that the assessment result is only shown by the donors who reported untied, partially untied and tied section.

Figure 10. Share of amounts tied, untied and partially tied in development finance to energy and RE generation in Mongolia, 2015-2018



Source: Created by the Author, data based on OECD CRS, Aid Atlas (SEI, 2019)

4.2 Overall assessment card for effectiveness principles

Based on the assessment for effectiveness principles and chosen indicators, the findings suggest that overall effectiveness of development finance to RE in Mongolia is to *some extent not satisfactory*. This may be due to lowest assessed factors including 1) low institutional capacity building and lack of commitments for energy education & training and energy research from donors side; 2) absence of RE target for district heating, cooling and transport in the energy policy at the country level, 3) low disbursement made by the donors against commitments 4) low and unchanged county level rating on quality of budgetary and financial management and gender equality.

Each indicator and principles are explained in the following chapters.

Principle	Indicator	Criteria	
Ownership and policy alignment <i>Some extent not satisfactory</i>	O1. Mongolia set country specific RE policy framework and investment needs <i>Satisfactory</i>	O1.1. Inclusive RE legal framework	<i>Satisfactory</i>
		O1.2. Comprehensive RE policy framework	<i>Some extent not satisfactory</i>

	O2. RE interventions are led by country RE policy framework <i>Satisfactory</i>	O2.1. RE interventions led or initiated by country	<i>Satisfactory</i>
		O2.2. RE interventions are aligned with their objectives and rationalities	<i>Satisfactory</i>
	O3. Development finance strengthens institutions <i>Some extent not satisfactory</i>	O3.1 Commitment for energy policy and administration	<i>Satisfactory</i>
		O3.2. Commitment for energy education & training	<i>Not satisfactory</i>
		O3.3. Commitment for energy research	<i>Not satisfactory</i>
		O3.4. Commitment for energy conservation & efficiency	<i>Satisfactory</i>
	General perception on ownership <i>Some extent not satisfactory</i>	Government body	<i>Satisfactory</i>
		Private sector	<i>Some extent not satisfactory</i>
		CSOs	<i>Some extent not satisfactory</i>
	Focus on results <i>Some extent not satisfactory</i>	R1. Country set comprehensive RE target setting, achievement of results are in place <i>Some extent not satisfactory</i>	R1.1. RE capacity
R1.2 RE target for electricity			<i>Some extent not satisfactory</i>
R1.3. RE target for district heating and cooling			<i>Not satisfactory</i>
R1.4 RE target for transport			<i>Not satisfactory</i>
R2. Results frameworks of RE interventions are aligned <i>Some extent not satisfactory</i>		R2.1. RE interventions set logical or results framework in line with country RE target setting	<i>Some extent not satisfactory</i>
		R2.1. Results indicators and framework are designed in line with SDG 7.2.1 and sustainability pillars	<i>Some extent not satisfactory</i>
Inclusive partnerships <i>Some extent not satisfactory</i>	P1. Enhanced Public-Private Partnerships (PPPs) <i>Some extent not satisfactory</i>	P1.1. PPP projects in RE infrastructure have increased since 2014	<i>Some extent not satisfactory</i>
		P1.2. Procuring infrastructure PPPs (WB assessment of 2018)	<i>Some extent not satisfactory</i>
	P2. Inclusive CSOs engagement <i>Some extent not satisfactory</i>	P2.1. Consultation of CSOs in the design, implementation and monitoring of RE interventions and policies	<i>Some extent not satisfactory</i>
		P2.2 Enabling Environment for CSOs in the context of RE	<i>Some extent not satisfactory</i>
Transparency and accountability <i>Not satisfactory</i>	T1. Disbursement against commitments in the RE development finance <i>Not satisfactory</i>	T1. Development finance for RE has been disbursed as commitment (Disbursement ratio)	<i>Not satisfactory</i>
	T2. Untied RE development finance <i>Satisfactory</i>	T2. Bilateral development partners enable RE energy procurement without geographical constraints (untied)	<i>Satisfactory</i>
	T3. Transparency, accountability, budgetary management and gender equality <i>Not satisfactory</i>	T3.1. Quality of budgetary and financial management	<i>Not satisfactory</i>
		T3.2. Transparency, accountability and corruption in the public sector	<i>Some extent not satisfactory</i>
		T3.3. Gender equality	<i>Not satisfactory</i>

Separated assessment table of each principle is shown in Appendix.

4.3 Assessment of ownership and policy alignment

Assessment of ownership is based on the selected three indicators and perspectives from key actors in the RE and development finance.

4.3.1 Assessment of O1. Mongolia set country specific RE policy framework and investment needs

Criteria and rating			
Existing RE legal framework (i) allow private sector ownership of RE generation	Yes	<i>Satisfactory</i>	<i>Satisfactory</i>
Existing RE policy framework (i) Set goal (s), priorities, targets (ii) RE target integrated with international commitments (e.g. NDC, SDGs) (iii) Set investment needs/plan	Yes	<i>Some extent not satisfactory</i>	
	No		
	Yes		

In short, county-specific RE policy framework and investment needs are assessed as *satisfactory* because Mongolia has the RE legal framework which also allows private sector ownership of RE generation that is one qualification of WB’s RISE indicator (WB, 2017c). The key RE targets found from policy documents are:

- *National Green Development Policy, INDC*: Increase renewable electricity capacity from 7.62% in 2014 to 20% by 2020 and to 30% by 2030 as a share of total electricity generation capacity.
- *State Policy on Energy*: Share of RE in total installed capacity to 20% by 2023, 30 by 2030 (base year 2014)

Furthermore, defining financial source for specific RE development by international, public and private investment and co-operation would be helpful for investment plan. The national mid-term program 2018-2023 of the State Policy on Energy identified investment needs and international development co-operation within the framework of the goal to increase the share of RE in the installed energy capacity to 20 percent by 2020 and 30 percent by 2030.

In addition to the investment plan, the Policy devised a framework of strengthening co-operation with development partners including additional two partners – World Bank and Germany’s Bank for Reconstruction and Development in terms of power and electricity distribution and transform network.

Satisfactory result: Existing RE policy framework outlines its goals, targets and investment needs by key development partners, therefore assessment for this criterion is satisfied. In a bigger picture, RE is the third priority in the energy policy as it is ranked after energy safety/security and energy efficiency. Within the RE sector, increasing RE installed capacity is a key policy target, and main RE sources are hydro, solar and wind.

“The most important thing is to provide households with reliable electricity, and then decide whether it should be green or brown. Then affordable, third source, fourth energy efficiency must be developed technically and economically” (I1 ERC, MoE).

Not satisfactory result: However, some improvements are needed in the existing RE policy framework in terms of integration with SDGs and NDC. For example, the State Policy on Energy’s stated RE target is focused on the supply side of increasing capacity rather than demand side of RE electricity. Instead, NDC and National Green Development Policy led

setting RE in electricity target. This may lead to the fact that many RE projects aim to deploy and align with the target of increasing RE capacity rather than RE electricity objective.

4.3.2 Assessment of O2. RE interventions are led by country RE policy framework

Criteria		Rating	
(i) RE interventions are led or initiated by country bodies (e.g. government agencies, local private companies, or local CSOs)			
	0	no lead by country	
Scoring	50	not specific, but in co-operation with country bodies	
X	100	lead by country	
(ii) RE interventions are aligned with their objective and rationalities			
	0	doesn't match any of RE policy framework	
Scoring	50	matches general energy policy framework, not specific RE goals	
X	100	aligned with RE policy framework and specific goals (e.g. increase RE production, reduction of CO2 emission)	
Development partners and RE project		(i)	(ii)
1	China: Erdeneburen Hydropower plant		
2	EBRD, Japan: Tsetsii Wind Farm Project		
3	CIF, ADB, World Bank, Germany: Upscaling Renewable Energy Sector Project		
4	EU, EBRD, Denmark: Sainshand Wind Park		
5	GCF: Renewable Energy Program #1 – Solar		
6	Korea: Eco-friendly Town Development Project		
7	Czech Republic: Improvement of the reliable electric supply in Mongolia		NA
8	UNDP, GEF: NAMA in Construction Sector		
9	World Bank: Ulaanbaatar Clean Air Project		
10	ADB, China, Korea: Northeast Asia Power System Interconnection (NAPSI)		
		<i>Satisfactory</i>	

It is observed that RE interventions received *satisfactory* result in terms of country RE policy framework with selected RE interventions that are both (i) led and co-operated with the country including government bodies and local private companies and (ii) aligned with RE policy framework and specific targets.

4.3.2.1 RE interventions are led or initiated by country bodies (e.g. government agencies, local private companies, or local CSOs)

In terms of initiation and co-operation, findings illustrate that five projects are initiated by government officials, of which four are aligned with State Policy on Energy and its investment plan from ADB, World Bank, CIF, Germany, China. Also, there are three project which received funds from EBRD, Japan, GCF, EU institutions, Denmark, the request of private sector organizations (e.g., Sainshand Wind Park LLC, Clean Energy Asia LLC, XacBank). In one case, Korea's eco-friendly town development project started by South Korea received agreement on the final beneficiaries of the project from the National Renewable Energy Center, which then led to confirmation between MoE and KIAT.

4.3.2.2 RE interventions are aligned with their objective and rationalities

From the perspective of rationality and the objective of the projects rationalities of the RE interventions are aligned with the country-set RE policy framework as the majority of RE projects funded by development and climate finance are either referenced through national goals of GHG reduction and RE target. In one exception, the Erdeneburen hydropower plant objective is aligned with the general energy policy framework such as energy security (EHPP,

2018), yet it is not specifically led by specific Mongolian RE or the GHG reduction target. In the case of project “Improvement of the reliable electric supply in Mongolia” (CZE, 2017), there is no publicly available project document found and available project description does not include information fundamental rationality of the project, making it difficult to assess compared to other projects.

In practice, international development organizations and banks have direct contact with the Government of Mongolia. The MoE Energy Regulatory Commission (ERC) reaffirms the country leadership in that MoE first determines its needs (e.g. where and how many MW of power plant it wants to build, and which will be solar, wind or hydropower) (Interview ERC). Regarding experiences of development partners, an allocation on the list of needs is made. On the other hand, international banks first ask the MoE and the Government of Mongolia (GoM) for their needs and this overlap so that they can work together on gaps.

“ERC is an independent body that balances both consumers and suppliers because it sets the price of electricity and heat for consumers and must make decisions based solely on professional research without any outside influence. Therefore, it must be independent and autonomous. It has five commissioners appointed by the Prime Minister” (I1 ERC, MoE).

Table 8. RE projects funded by development and climate finance: Client, rationality or objectives, references policy and goals

	Donors & RE project	Client	Rationality or objectives	Referenced policy and goals
1	<i>China</i> Erdeneburen Hydropower plant 64 MW	The Government of Mongolia	Improve stability of energy system in Western region of Mongolia, Reduce the dependency on imported energy, Increase reliable energy supply	The Government of Mongolia’s energy strategy
2	<i>Japan, EBRD</i> Tsetsii Wind Farm Project 50MW	Cleian Energy Asia LLC	Reduce carbon intensity and GHG emissions, Promote use of renewable power Strengthen private sector presence	National program at reducing GHG emissions; RE target: Increase share of RE in total energy production to 20% by 2020
3	<i>CIF, ADB, World Bank, Germany</i> Upscaling Renewable Energy Sector Project Total 41.5MW 10 WM Wind 6MW Wind 5MW PV 10MW PV Battery Hybrid (Wind +PV)	The Government of Mongolia	Reduce dependence on high cost imported electricity, Decarbonize the country’s energy sector with (i) deployment of the distributed RE systems in remote and less developed regions in Mongolia; (ii) enhanced capacity of local public utilities in investment planning, project management, and grid control for sustainable RE upscaling in the targeted region	Law on Renewable Energy; RE target: Increase share of RE in total capacity;
4	<i>EU, EBRD, Denmark</i> Sainshand Wind Park 55MW	Sainshand Salkhin Park LLC	Attract FDI into Mongolia; Boost local and national economy through creation of jobs, supply of clean energy, contribution of taxes, Contribute to greener economy (reduction of GHG emissions)	RE target: 20% renewable installed capacity by 2020; Reduction of GHG emissions
5	<i>GCF</i>	XacBank	Contribute to Mongolia’s stated goal of a 14% reduction in total national GHG emissions (INDC) through deployment	INDC: Increase share of RE capacity

	Renewable Energy Program #1 – Solar 10MW		of solar-grid power plant in Southern Mongolia.	in total generation to 30% in 2030 State Policy on Energy: RE target: installed energy generation 20% by 2023 and 30% by 2030
6	Korea Eco-friendly Town Development Project	Korea Institute of Advancement Technology (KIAT), MoE	Increase utilization of RE sources (solar and wind)	RE target: Increase share of RE sources to 30% by 2030
7	Czech Republic Improvement of the reliable electric supply in Mongolia	Ministry of Environment and Tourism (MET)	Improve the power source for Domogt Shariin Gol Forest Nursery by installing additional solar panels, batteries and control units Develop afforestation project	NA*
8	GEF, UNDP NAMA in Construction Sector	UNFCCC, The Government of Mongolia	Facilitate market transformation for energy efficiency by removing barriers to increased adoption of energy efficient technologies in the construction sector.	INDC, NAMA
9	World Bank Ulaanbaatar Clean Air Project	The Government of Mongolia	Achieve air pollution reduction objectives through promotion of cleaner stoves, development of medium-term abatement measures (city greening, district heating, power plant emissions control and an affordable housing strategy), and strengthening coordination on air pollution abatement.	
10	ADB, China, Korea Northeast Asia Power System Interconnection (NAPSI)	The Government of Mongolia	Reduce carbon footprints of the power system in Northeast Asia Optimize power system in Northeast Asia Reach stakeholders' agreement on the Northeast Asia power system interconnection (NAPSI) plan	State Policy on Energy

Source: Created by the Author, collected from the development partners' and implementing agencies' project document and website (ADB, 2017; EBRD, 2016; EHPP, 2018; CZE, 2017; GCF, 2017; IIE GmbH, 2018; KDS, 2019; Sainshand Salkhin Park LLC, 2016; UNDP, 2016; WB, 2019c; XacBank, 2017b)

4.3.3 Assessment of O3. Energy development finance strengthens institutions

Criteria and scoring	Result	
Development finance commitments for (since 2014)		
(i) general energy policy and administration has increased	Yes	<i>Some extent not satisfactory</i>
(ii) energy education and training has increased	No	
(iii) energy research has increased	No	
(iv) energy conservation and efficiency has increased	Yes	

In general, capacity building for local institutions through energy development finance is assessed as *not satisfactory in some extent* due to no increase or no change of development and climate finance commitments for “energy education or training” and “energy research” between

2015-2018, compared to the period from 2010 and 2014. At the same time, commitments to “energy policy and administration” and “energy conservation and efficiency” has increased. For example, Mongolia received general energy policy and institutional support of USD 74 million committed development finance from 13 donors between 2015 and 2018. The largest portion of commitment was directed to the Ulaanbaatar Air Quality Improvement Program in 2018 from ADB, accounting for 77% of total commitment for institutional support. Second, the type of energy policy support was directed towards energy conservation and efficiency policy. There is much less commitment made -towards “energy education” and “energy research” since 2010.

Table 9. Average number of committed transactions (development finance) for energy-related policy in Mongolia, 2010-2014 vs 2015-2018

Time period	Energy policy and administration	Energy conservation & efficiency	Energy education/training	Energy research
2010-2014	13	0	2	1
2015-2018	18	3	2	1

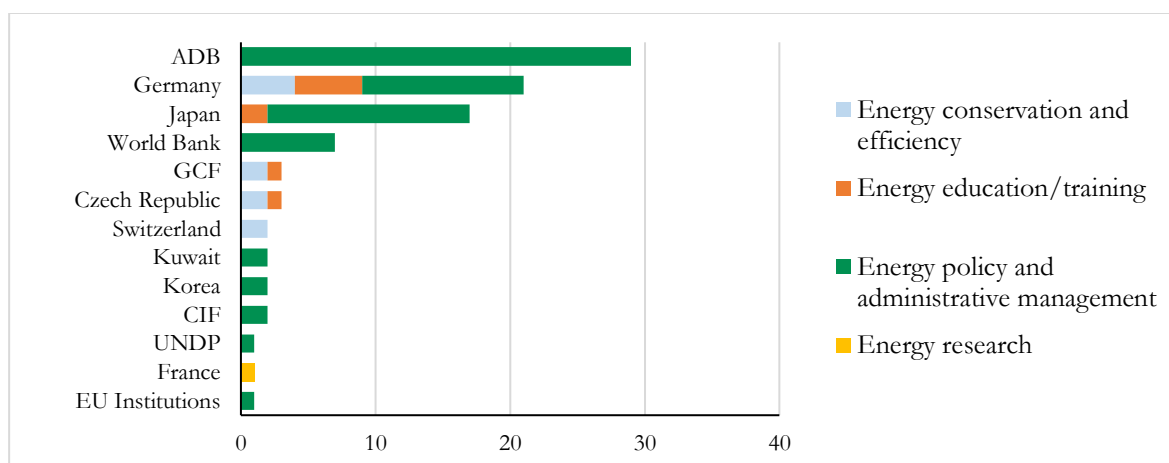
Source: Created by the Author, data based on OECD CRS , Aid Atlas (SEI, 2019)

Even though the number of development and climate finance was committed to energy policy, the interview result showed that the result is still not satisfactory given that there is lack of long-lasting capacity building for institutions (I1 ERC, MoE). In particular, the expert at MoE said that there is a tendency for several projects supported by international consultants. Therefore, there is a need for support on human resource development from development partners (e.g. experience to work with international organizations), he added.

“Aid policy should focus more on building capacity of local staff...without well trained and knowledgeable local staff, the project with international consultants could not achieve its goal and it can't be sustainable.” (I1 ERC, MoE)

In terms of donors, ADB, Germany and Japan have committed development finance with the purpose of energy policy and administrative management through TA and TC. Only one energy research project committed by France on energy production, distribution and general efficiency.

Figure 11. Number of energy related policy committed transactions made by donors, since 2015



Source: Created by the Author, data based on OECD CRS , Aid Atlas (SEI, 2019)

In the terms of RE, it is observed in terms of the project purpose that development finance with the objective of strengthening RE energy policy was committed by four development partners since 2015. ADB and CIF collectively committed to RE policy through the preparation of an Investment Plan for Scaling Up RE in Mongolia. Specifically, CIF's Capacity building and TA waimed at supporting the Government of Mongolia which led to an enabling environment for sustained public and private investments in the RE sector. Germany was one donor who supported RE education and training through its expert seminar for Mongolia's specialist and executive staff in Bavaria (four transactions). Lastly, the Kuwait fund committed development finance for the Taishir hydropower in terms of policy and institutional support. In addition, the latest co-operation was with the World Bank in the RE Law amendment of 2019 according to the interview with ERC, Ministry of Energy. He also added that EBRD and GGGI participation is focused on the development of RE auction procedures (I1 ERC, MoE).

Box 1. Lessons learned: Sthregntehning institutions by Project Preparation Facility

Lessons learned: Sthregntehning institutions by Project Preparation Facility (GCF)

GCF's Project Preparation Facility (PPF) for project development can be a good example to strengthen institutions. As part of the funding cycle, GCF offers PPF to accredited agencies for preparation of feasibility and pilot projects (I2 Climate finance officer, XB), this can build the capacity for local institutios.

“One of XacBank’s approved PPF projects is called Mini-grid/ off-grid Solution for Ger Area. XacBank received funds to design and test a mini-grid system that would provide low-emission heating and potentially sewage and water services in ger-area neighborhoods lacking those services” (I2 Climate finance officer, XB).

Also, Readiness project offered by GCF which aims to strengthen governance and capacity building in the context of climate finance. Currently, there are seven country-level readiness activities for USD 5 million compared to total GCF finacing in Mongolia in USD 756,1 million (GCF, 2019a)

4.3.4 Perspective towards ownership

In terms of perspectives on the ownership principle from interviews, the result showed mixed perceptions. Half of the interviewees view as the MoE's role in leadership and ownership as satisfactory yet there are some improvements suggested from private sector and CSOs. For example, there is a lack of influence for energy policy framework to motivate accredited entities when they design the RE projects (I2 Climate finance officer, XB); their projects are mostly motivated by the international policies and country commitments.

4.4 Assessment of focus on results

4.4.1 Assessment of R1. Country policy set comprehensive RE target setting; achievement of results in place

Criteria assessment					
	RE capacity	RE target for electricity	RE target for district	RE target for transport	<div style="text-align: center;"> $x \geq 67$ $33 < x < 67$ $33 \leq x$ </div>

				heating & cooling		Not satisfactory
The policy set RE targets and result indicators in measurable and timely manner	Yes	Yes	No	No		
Yes 100 Specific RE target set with baseline, year, result and M&E						
No 0 No specific RE target or any of components missing						
Achievements of policy targets and results are in place	Yes	No				
No target is set in the policy						
Yes 100 Successful achievement as planned (or closer to 100%, as of 2019)						
No 0 Under achievement as planned (as of 2019)						

Assessment of RE target setting in line with sustainable energy is *not satisfactory* due to lack of comprehensive RE target setting in line with sustainable energy as well as under achievement of the RE target for electricity.

4.4.1.1 Sustainable RE target setting

Mongolia developed its general RE target and electricity, but it did not integrate district heating and transport in policy target level, hence no result indicators.

RE for heating: There is no specific RE target set for district heating and cooling, all the actions for heating are focused on energy efficiency and heat loss. However, though there are several RE opportunity assessments made by development partners including GEF, UNDP and GGGI. For instance, NAMA in the Construction sector (UNDP, 2016) suggested that RE applications should be complementary tools supporting energy efficiency technology such as solar PV lighting and solar water heaters used for space heating. Also, assessment of strategies for development of green energy systems in Mongolia (GGGI, 2013) highlighted deployment of RE in power and heat supply. Specifically, it raised ground-source heat pumps as one solution to turn electricity into heat. With the highly efficient heat pumps, it possible to generate and store heat for a longer period, which is suitable for Mongolia's long and cold winters. Also, a small-scale solution is to install resistance heaters or resistance coils in district heating systems including homes and businesses.

RE for transport: There is a lack of a specific RE target for transport in the energy policy, even though INDC set a measurable target for private hybrid road vehicles¹⁶ (GoM, 2015a). While for public transportation, NAMA and GGGI referenced the importance of RE deployment in transport sector. For instance, NAMA Transport considers clean fuels from RE as one of four¹⁷ mitigation actions to establish a sustainable urban passenger transport system in Ulaanbaatar, capital city of Mongolia (NAMA, 2015), it did not set specific goal yet. In terms of assessment for introducing RE for policy planning, the study (GGGI, 2013) showed that shifting 20% of buses in Ulaanbaatar to compressed natural gas (CNG) may improve local urban air quality in the mid-term. Furthermore, GGGI scenario included electric vehicles in the long term and that de-carbonization of transport fuels can be fulfilled through use of low-GHG biofuels, enhanced

¹⁶ Increase the share of private hybrid road vehicles from approximately 6.5% in 2014 to approximately 13% by 2030.

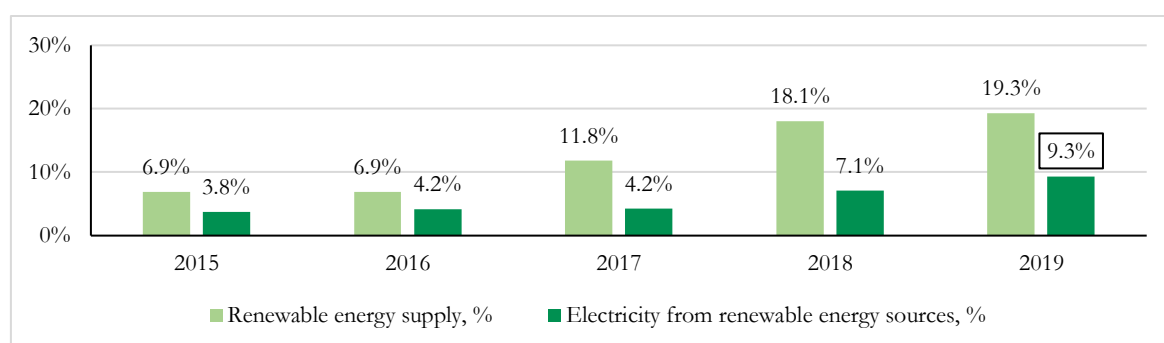
¹⁷ Other non-RE mitigation goals include Bus Rapid Transit (BRT) system with 65km of bus-only lanes, establishing metro of 18km, and retrofit of taxis to LPG.

vehicle efficiency or CO2 emission standards, enforcement of regulations such as carbon taxes on CO2 intensity and engine size, set long term targets for vehicle sellers (GGGI, 2013).

4.4.1.2 Achievement of RE results

Current statistics show that RE capacity installed by percentage reached almost 20% in 2019 (ERC, 2019). The goal is to continue increasing the share to 40%, or 50% technically, if a hydropower plant is built, as it will be possible to increase the share (I1 ERC, MoE). However, the electricity share from RE is still insufficient compared to the goal of 20% in the Green Development Policy. As of 2019, electricity supply from RE increased to 9.3% in 2019.

Figure 12. RE in Mongolia as a share of total energy supply and as a share of electricity supply



Source: Mongolian Energy Regulatory Commission, Energy Statistics 2019 (ERC, 2019)

Integrating generation and transmission plans is under development, as it faces several challenges according to ERC (I1 ERC, MoE). This includes (1) lack of capacity in the existing transmission network, (2) the location gap between power plants, the transmission network and end-users, and (3) technical fluctuations associated with the RE (i.e., if production stops when the wind is not blowing). Therefore, in order to reach the RE electricity target, MoE is focused on deployment of hydropower, battery systems and pump storage (I1 ERC, MoE).

4.4.2 Assessment of R2. Results frameworks of RE interventions are aligned

Criteria assessment		Traffic light If the score X is															
(i) RE interventions set logical or results framework in line with country RE target setting	<table border="1"> <tr> <td rowspan="4">Scoring X</td> <td>0</td> <td>No publicly available information or project documents about measurable result framework or indicators</td> </tr> <tr> <td>0</td> <td>No measurable result indicators, neither in line with country RE framework</td> </tr> <tr> <td>50</td> <td>Measurable results indicator, but full results framework and M&E are not publicly available</td> </tr> <tr> <td>100</td> <td>Measurable results framework with M&E</td> </tr> </table>	Scoring X	0	No publicly available information or project documents about measurable result framework or indicators	0	No measurable result indicators, neither in line with country RE framework	50	Measurable results indicator, but full results framework and M&E are not publicly available	100	Measurable results framework with M&E	<table border="1"> <tr> <td>Satisfactory</td> <td>$x \geq 67$</td> </tr> <tr> <td>Some extent not satisfactory</td> <td>$33 < x < 67$</td> </tr> <tr> <td>Not satisfactory</td> <td>$33 \leq x$</td> </tr> </table>	Satisfactory	$x \geq 67$	Some extent not satisfactory	$33 < x < 67$	Not satisfactory	$33 \leq x$
Scoring X	0		No publicly available information or project documents about measurable result framework or indicators														
	0		No measurable result indicators, neither in line with country RE framework														
	50		Measurable results indicator, but full results framework and M&E are not publicly available														
	100	Measurable results framework with M&E															
Satisfactory	$x \geq 67$																
Some extent not satisfactory	$33 < x < 67$																
Not satisfactory	$33 \leq x$																
(ii) Results indicators and framework are designed in line with SDG 7.2.1 and sustainability pillars	<table border="1"> <tr> <td rowspan="4">Scoring X</td> <td>0</td> <td>No publicly available information or project documents about measurable result framework or indicators</td> </tr> <tr> <td>0</td> <td>Not aligned</td> </tr> <tr> <td>50</td> <td>Indirectly aligned (e.g. energy efficiency)</td> </tr> <tr> <td>100</td> <td>Fully aligned</td> </tr> </table>	Scoring X	0	No publicly available information or project documents about measurable result framework or indicators	0	Not aligned	50	Indirectly aligned (e.g. energy efficiency)	100	Fully aligned							
Scoring X	0		No publicly available information or project documents about measurable result framework or indicators														
	0		Not aligned														
	50		Indirectly aligned (e.g. energy efficiency)														
	100	Fully aligned															
Development partners and RE project		X=sum, divide by 10 (i) (ii)															

1	China: Erdeneburen Hydropower plant			$X = \text{sum, divide by } 2$ <i>Some extent not satisfactory</i>
2	EBRD, Japan: Tsetsii Wind Farm Project			
3	CIF, ADB, World Bank, Germany: Upscaling Renewable Energy Sector Project			
4	EU, EBRD, Denmark: Sainshand Wind Park			
5	GCF: Renewable Energy Program #1 – Solar			
6	Korea: Eco-friendly Town Development Project			
7	Czech Republic: Improvement of the reliable electric supply in Mongolia			
8	UNDP, GEF: NAMA in Construction Sector			
9	World Bank: Ulaanbaatar Clean Air Project			
10	ADB, China, Korea: Northeast Asia Power System Interconnection (NAPSI)			

In short, the results framework of RE interventions assessed as *some extent not satisfactory* is due to some of the selected RE projects having unclear or unavailable results indicators. Even though development partners share general information about the projects and goals, there is lack of transparency in terms of information about results indicators and M&E, making it hard to track and follow up. In practice, the results target and indicators for training local staff is scrutinized by the MoE, and MoE expert suggested that development partners should set a budget for intended outcome with a clear objective, baseline and targets in terms of training local staff.

“.. if the power plant is built, it is necessary to include a certain amount of money for training local staff with certain things that they must learn by the end of the project.” (I1 ERC, MoE)

4.4.2.1 RE interventions set logical or results framework in line with country RE target setting

Furthermore, many RE interventions have defined results and outcomes in both qualitative and quantitative aspects (See Appendix). RE interventions coordinated with climate change funds (CIF, GCF, GEF), multilateral donors like World Bank, ADB, UNDP, and Germany have the clearest RE results framework (visualised version) outlined in the project documents, including baseline, target, and measurable indicators followed by M&E. While RE private projects financed by EBRD, EU, Japan, China, Korea, and the Czech Republic have result-like measurable indicators rather than a comprehensive results framework.

Project level M&E and compliance: Furthermore, many multilateral development partners like World Bank, ADB, EBRD, GCF, GEF have their own independent evaluation and safeguard systems. For example, World Bank’s implementation ratings assess RE intervention in three aspects: progress towards achievement of the project development objective, overall implementation progress. World Bank’s Ulaanbaatar Clean Air Project received a satisfactory rating on progress towards achievement and overall implementation progress as of January 2020.

4.4.2.2 Results indicators or framework are designed in line with SDG 7.2.1 and sustainability pillars

Sustainability pillars. Overall sustainability aspects are included in the majority of RE projects’ results framework or results indicators, which supports the SDG 7, in particular 7.2.1 RE share in the total final energy consumption (UNIDO, 2018).

The *techno-economic* aspect of RE interventions by the development partners has gained more attention from development partners as referenced in the result indicators, including RE capacity, RE generation connected to the central grid, the number of jobs created during

construction and production stages and tons of coal saved (Appendix). Specifically, the most common RE technical indicator is RE capacity in MW; all the RE projects and development partners obtained this indicator. RE generation in MW/h is common but not all development partners utilized it as a result indicator compared to RE capacity. The creation of jobs during construction and commission of RE projects are promised in some of RE development projects such as hydro, wind and solar power plants - Erdeneburen hydro, Sainshand Wind farm, Renewable Energy programme 1 #Solar (EHPP, 2018; Sainshand, 2016; XacBank, 2017a). Together they aim to create a total of 1000-1250 temporary and 110-155 permanent RE workplaces. For example, Erdeneburen Hydropower plant has pledged to create over 800 temporary and 70 permanent jobs (EHPP, 2018). Also, the Czech Republic’s RE related intervention aims to enhance capacity building by 150 trainers and trainees through the RE related intervention (CZE, 2017)

Tools to assess environmental and social aspects: In the case of constructing RE technology, there is EIA requirement which is endorsed by the law of 2012, in addition to EIA, safeguard and assessment systems are requested by donors. For example, EBRD and GCF have specific standards and requirements on the environment and social aspect of the projects. In the case of RE projects, both Sainshand and Tsetsii Wind Farm (EBRD, 2016, 2017) are in accordance with EBRD’s performance requirements and disclosure such as Environmental and Social Action Plan and Environmental and Social Impact (CEA, 2016). Furthermore, Sainshand Wind Park was followed other funders’ requirements including EU and EIB’s standards¹⁸ (EBRD, 2017). While, GCF also has Environment and Social Safeguards that accredited agencies must follow Environment and Social management system (ESMS) and the projects are screened accordingly (GCF, 2017). Furthermore, ESMS on RE #1 Solar programme well explained all the potential and social impacts, risk type (B), as well as alignment with Mongolia’s Environmental policies and regulations (XacBank LLC, 2017a). Apart from EIA, ESIA or ESMS carried out by the implementing agencies and consultants, reduction of GHG emissions is taken as key environmental indicator in the results frameworks. Also, the impact indicator of saved water received high attention as a result of the RE project given that it is frequently mentioned in the project impact and result framework. The social result indicator of the RE projects has a common indicator namely, the number of households with access to or low-carbon energy or clean energy supplies which are also aligned with social aspect of sustainability dimensions.

Political aspect: In addition, ADB’s Strategy for the Northeast Asia Power System (NAPSI), co-financed by the Climate Change Fund, the People’s Republic of China Regional Co-operation and Poverty Reduction Fund, and the Republic of Korea e-Asia and Knowledge Partnership Fund, and its result indicator is associated with more about political aspect . For example, intended result is focused on a steering committee and developing action plan.

4.5 Assessment of inclusive partnerships

4.5.1 Assessment of P1. Enhanced Public-Private Partnerships

Criteria assessment	Result	
(i) PPP Projects in RE infrastructure have increased since 2014		
<i>Scoring</i>		
0 <i>Not satisfactory</i>	Decreased or no increase	
50 <i>Some extent not satisfactory</i>	Increased number of PPPs projects	<i>Some extent not satisfactory</i>

¹⁸ EIB’s Standards on Assessment and Management of Environmental and Social Standards and Risks and substantive environmental standards of the EU.

	100 <i>Satisfactory</i>	Constant increased number of PPPs projects				<i>Some extent not satisfactory</i>
(ii)	Procuring Infrastructure PPPs (Assessment of 2018) – External factor				<i>Some extent not satisfactory</i>	
	Preparation of PPPs -24	Procurement of PPPs - 42	PPP Contract Management- 60	Unsolicited Proposals-75		

In terms of inclusive private sector partnership, the findings showed that the assessment focused on enhanced public-private partnership infrastructure is *not satisfactory in some extent*. For RE investment, the result showed the lack of an increasing trend in the number of PPPs RE projects. While at the country level, significant concern is required in the preparation of PPPs. Similarly, procurement and contract management should be taken into account for improvements in order to improve inclusive private partnerships.

4.5.1.1 PPP Project in RE infrastructure

Practitioners confirm that foreign investment and international development finance have funded largescale RE projects in Mongolia in the recent years (I1 ERC, MoE, I3 MRLA).

“International organisations often willing to support for the large scale RE power plants, and there is no interest in investment from local private companies” (I3 MRLA).

Specifically, EBRD and Japan are the development partners who directly work with RE private producers such as Clean Energy Asia LLC and Sainshand Wind Park LLC, hence they have direct dialogue with RE private producers in Mongolia. This is also evidenced through PPPs invesment data (WB, 2020). For example, since 2014, a total of four RE infrastructure projects (two wind, two solar) received under condition of PPPs: Tsetsii Wind Farm, Sainshand Wind Farm, Desert Solar Power, Sermsang Kushig Khundii, with a total investment worth USD 327 million (Table 10. Public-Private Partnerships (PPPs) investment in RE). All are 100% private ownership companies, and no information available in terms of government support (WB, 2020).

Table 10. Public-Private Partnerships (PPPs) investment in RE

Year	Number of projects	Project(s) name, Company	Percentage private	Cooperated development partners	Invesment (USD million)
2014-2015	0	-	-	-	0
2016	1	Tsetsii Wind Farm, Clean Energy Asia LLC	100%	EBRD, JCM	128,0
2017	1	Sainshand Wind Farm, Sainshand Salkhin Park LLC	100%	EBRD, EIB, Denmark (EKF)	120,0
2018	1	Desert Solar Power, Desert Solar Power One LLC	100%	EBRD	54,0
2019	1	Sermsang Kushig Khundii Solar PV Power Plant	NA	ADB	18,7

Source: PPP Knowledge Lab (WB, 2020)

Climate funds like GCF, CIF also have been promoting the private sector through RE interventions. In 2017, the local bank XacBank developed one solar project, with funding from GCF (GCF, 2017; XacBank LLC, 2017b). CIF’s Upscaling RE program cooperated with ADB, World Bank and Germany. While there was no private sector interests for investment, it is

planned to increase public-private investment as PPP is one of the result indicators (GoM, 2015b). Hence, there is room for private investors in Mongolia for planned RE projects such as Upscaling RE program, furthermore MoE specifically aims to support private sector (I1 ERC, MoE).

4.5.1.2 Energy sector public-private dialogue

There are various levels of dialogue between existing RE private producers and government entities. Starting from getting permission for the new RE power plant, private sector organizations go through multiple stages in each government agency.

“If you want to build a power plant, you have to get permission from the Ministry first, then you have to get land and other permits from the ERC, you have to get permission to build a construction, and then you have to get permission to supply energy. So, it is a lot of work. If government agencies receive complaints, then it tends to become unsuccessful work.” (I3 MRLA)

“As with other countries, political circumstances such as changing administrations can sometimes make it difficult for a private sector accredited entity to partner with public sector entities on program delivery.” (I2 Climate finance officer, XB)

On the operation level, public private dialogue is also significant in the RE private producers' sector especially given that all energy managing organisations from transmission to distribution to end users are state owned but separate entities in Mongolia.

“For example, RE power plants generate electricity and sell it to the transmission network. From transmission network to distribution organizations, finally from distribution to selling to consumers. RE power plant are privately owned, have signed long-term PPA with National Dispatching Center as a buyer. (I1 ERC, MoE)

There are some good lessons from the recent cases from development partners and local association. Upscaling RE organized several workshops among 50 representatives from public, private organizations and NGOs. Of these, 32 were private sector companies, RE producers.

4.5.1.3 Policy support in increasing private participation

It is hard to say there was a direct connection between development finance for RE and enhanced public-private dialogue. While based on the recent changes on RE law supported by World Bank, there were several changes towards supporting RE private sector such as introducing auction system and reducing tariff. Auction system means open competition among private and international investors, so it will support private sector (I1 ERC, MoE).

“In the past, the private sector developed a project, did a feasibility study, went to the Ministry and got a license from the Energy Regulatory Committee. This means that the tariffs will be approved, which will be fixed for 15-20 years...Now after RE law amendments approval in June 2019, the state chooses the place where the project will be implemented, and the private sector and international investors come to the site and compete for 50MW. Therefore, ERC will approve a price that offered by the winner of a competitive procurement for RE projects.” (I1 ERC, MoE)

There might be a transition barrier for some private RE power plant owners when they already prepared the project payback in terms of older tariffs; now they are repaying the loan (I3 MRLA); nonetheless the new tariff system is good for market development, the MRLA officer says.

4.5.1.4 Procuring Infrastructure PPPs

In terms of country PPPs, the country’s concession/PPP unit manages the selection, tendering and contracting, and these processes were then transferred to the Mongolian National Development Agency¹⁹, following the dissolution of Invest Mongolia Agency and the Ministry of Economic Development (WB, 2018a). The same assessment found there is no revision of Mongolia’s State Policy on Public Private Partnership²⁰ on energy generation and distribution, and there is no regulatory restrictions on PPPs other than national defense or related matter of national security.

Another assessment result has been conducted in Mongolia by World Bank, on Benchmark on Procuring on Infrastructure PPPs, intended to assist countries to work on gaps in an effort to enable better infrastructure service delivery and develop better PPP procurement (WB, 2020). *Preparation of PPPs* received a 24 score out of 100, due to challenges in the areas such as fiscal treatment of PPPs, Risk Identification, Comparative Assessment (Value for Money Analysis), Market sounding and EIA. These can be barriers for investors to enter the market while other obstacles for private partnership may derive from the gaps in *procurement of PPPs and contract management* given that both ratings are also not satisfactory in some extent (WB, 2017). Unsolicited proposals of Mongolia are assessed relatively high compared to the other areas. It means that businesses initiated the project and submitted to the proposals regardless of response to a request from the government (WB, 2019d), hence it promotes the private sector initiation in a way.

4.5.2 Assessment of P2. Inclusive Civil Society Organisations (CSOs) partnership

Criteria assessment		Result										
(i) Consultation of CSOs in the design, implementation and monitoring of RE interventions and policies <i>Scoring:</i> <table border="1"> <tr> <td style="background-color: red; color: white;">0</td> <td style="background-color: red; color: white;">Not satisfactory</td> <td>No consultation</td> </tr> <tr> <td style="background-color: yellow;">50</td> <td style="background-color: yellow;">Some extent not satisfactory</td> <td>Occasional</td> </tr> <tr> <td style="background-color: green;">100</td> <td style="background-color: green;">Satisfactory</td> <td>Regular and institutionised</td> </tr> </table>	0	Not satisfactory	No consultation	50	Some extent not satisfactory	Occasional	100	Satisfactory	Regular and institutionised		$x \geq 67$	
	0	Not satisfactory	No consultation									
	50	Some extent not satisfactory	Occasional									
	100	Satisfactory	Regular and institutionised									
			$33 < x < 67$									
		$33 \leq x$										
	<i>Some extent not satisfactory</i>		<i>Some extent not satisfactory</i>									
<table border="1"> <tr> <td>Government agencies consult CSOs</td> <td>Occasional</td> </tr> <tr> <td>Government agencies consult CSOs in SDG7</td> <td>No consultation</td> </tr> <tr> <td>Private entities consult CSOs</td> <td>Occasional</td> </tr> <tr> <td>Development partners consult CSOs</td> <td>Occasional</td> </tr> </table>	Government agencies consult CSOs	Occasional	Government agencies consult CSOs in SDG7	No consultation	Private entities consult CSOs	Occasional	Development partners consult CSOs	Occasional				
Government agencies consult CSOs	Occasional											
Government agencies consult CSOs in SDG7	No consultation											
Private entities consult CSOs	Occasional											
Development partners consult CSOs	Occasional											
(ii) Enabling Environment for CSOs in the context of RE <table border="1"> <tr> <td style="background-color: red; color: white;">0</td> <td style="background-color: red; color: white;">Not satisfactory</td> <td>No financial and information support, no other CSOs coordination</td> </tr> <tr> <td style="background-color: yellow;">50</td> <td style="background-color: yellow;">Some extent not satisfactory</td> <td>Lack of information, financial support and other CSOs coordination</td> </tr> <tr> <td style="background-color: green;">100</td> <td style="background-color: green;">Satisfactory</td> <td>Regular financial and information support, other CSOs coordination are in place</td> </tr> </table>	0	Not satisfactory	No financial and information support, no other CSOs coordination	50	Some extent not satisfactory	Lack of information, financial support and other CSOs coordination	100	Satisfactory	Regular financial and information support, other CSOs coordination are in place		<i>Some extent not satisfactory</i>	
0	Not satisfactory	No financial and information support, no other CSOs coordination										
50	Some extent not satisfactory	Lack of information, financial support and other CSOs coordination										
100	Satisfactory	Regular financial and information support, other CSOs coordination are in place										

Inclusive CSOs are assessed as *some extent not satisfactory* because of unregulated and occasional consultations with energy CSOs in the design of the RE policy, development by public

¹⁹ It is established in 2016 to set economic and sectoral priorities which aligned with the country’s sustainable development and investment plans as well as concession and PPP policies.

²⁰ Adopted by Government Resolution No. 64 in 2009. The policy covers six types of contracting methods including Build-Operate-Transfer, Build-Transfer, Build-Own-Operate, Build-Own-Operate-Transfer, Build-Lease-Transfer and Design-Build-Finance-Use (WB, 2017d).

institution and RE interventions funded by development partners. Also, there is a lack of information and financial support in the enabling environment for CSOs in the context of RE. Other CSOs coordination in the development of RE is also lacking.

4.5.2.1 Existing energy CSOs

Currently there are very few NGOs operating in promoting RE in Mongolia (I3 MRIA). So far, the only active NGO is Mongolian Renewables Industries Association (MRIA) that has been working towards RE development. Before it used to be called Wind Energy Producers Association for ten years; in light of the expansion of the RE sector and a suggestion from the public and international organizations, it expanded its operation and name from wind to RE. Including past association experience, MRIA has been operating in RE sector for about 12 years. Its operation includes trainings in co-operation with over 50 RE member organisations (Private producers) and an organizational annual forum (I3 MRIA). Two types of training include:

- (1) Discussion for member RE organisations such as integrating insurance companies with RE producers. Currently this training has been suspended.
- (2) Training engineers to work on RE technologies including solar, wind, hydropower plants, including safety lessons. MRIA noted that there are many trainings for thermal power plants, while RE trainings are limited (I3 MRIA).

The annual forum organized by MRIA attracts many actors in the RE sector. At the 2019 forum, one of the key discussion areas was the partnership between public and private organisations towards RE development and challenges (MRIA, 2018). After the forum, MRIA compiles the result of the forum discussion and sends the reports to the all major energy companies and government agencies (I3 MRIA). Therefore, the forum is also an opportunity for private sector companies to raise their voice which may potentially reach into government RE policy development.

“Initially, 100-200 people, including ministry officials, participated, but last year about 600-700 people participated. There is no record of a decrease but growing by 30, 40, 100 participants each year.” (I5 MRIA)

4.5.2.2 Consultation of CSOs in the design and implementation of RE interventions and policies

It is observed that there is no direct operation for development finance with energy CSOs. International institutions and banks have direct contact with the government (I1 ERC, MoE). Within the framework of the loan, the government and the MoE decide how to involve CSOs.

The MoE develops an annual plan for development of the transmission line and RE. It reflects the views of NGOs and private companies, such as through MRIA. MRIA first distributes the information to its member organizations (e.g. by email) and receives their opinion, then compile and makes a conclusion during the board meeting (I3 MRIA).

“We have come to common conclusion as a result of board meeting, so asking Ministries to receive our proposal. Basically, the Ministry asks, but they don’t include/consider 100% of our proposals.” (I3 MRIA)

In terms of sustainable development, in particular SDG 7, there has been no consultation with MRIA. The reason why there is lack of consultation on SDG may relate to the lack of SDG specialists within the public institutions. From MRIA side, they have not taken SDG inclusion within their operation yet.

“The Ministry has a RE department. There are probably 5 or 6 employees, not many people...These people may not be SDG specialists. We are not going through SDG either...Nowadays, more private organizations than public ones are taking SDGs and integrating in their plans. So they are working independently from the government.” (I3 MRLA)

Many RE projects included Stakeholder Analysis as an inclusive part of CSOs requested by the development partners (e.g. disclosure) and country obligation. In the RE interventions, most of the stakeholder analysis was complementary to EIA which identifies potential social impact on surrounding local communities due to RE power plants.

When it comes to high level consultation such as design, implementation and monitoring of the project, there is rare CSOs inclusion, especially energy CSOs. In the case of Taishir Wind Farm, there was no public consultation activity carried out during detailed EIA. Even some big projects like Upscaling RE project (CIF, ADB, World Bank) has low number of participation from CSOs (ADB, 2018). The level of CSO participation in the project design occurred in two stages (1) information generation and sharing (2) consultation. There were no partnership and collaboration with CSOs. For example, Energy Association was the only representative of CSOs from the list of about 50 participants during the first consultation workshop. Similarly, Wind energy Association was another representative of CSOs in the public workshop.

There is no direct support from development partners to support energy CSOs. MRLA also confirmed that it is indirectly involved in RE projects in terms of consultation, and it also doesn't closely work on RE projects if the RE power plant is operated far away or not connected to the central system. For example, the Durgun and Taishir hydropower plants are connected to the western region's integrated system. Also, neither Eg and Erdeneburen hydropower plants finished the construction and supplied energy to the network, there is no involvement from MRLA at the moment (I3 MRLA). However, more recently it showed that there is direct participation with MRLA. For instance, MRLA conducted a feasibility study on the construction of Waste Power Plant project in co-operation with Sweden and the United Kingdom (I3 MRLA).

4.5.2.3 Enabling environment of energy CSOs

Commitment from public and development partners are lacking. Although MRLA work closely with private sector in RE development. It has not enough support from Ministry and development partners, given that consultation with MRLA is very limited for RE interventions design.

In terms of financial support, according to accredited entities, enabling financial promotion for CSOs also depends on the type of instrument and design, some finance can go for support of CSOs.

“XacBank's specific GCF-financed programs aren't designed to provide loans directly to CSOs, XacBank's provision of both loans and grants can fill a gap in CSO programming.”(I2 Climate finance officer, XB)

Box 2. Lessons Learned: Promoting NGOs by grant financing

Lessons learned: Promoting NGOs by grant financing

“XacBank used GCF funds to support GERES, a French NGO when they were doing insulation retrofit project in order to post retrofit energy audits to do it correctly. In that sense, it is effectively support energy related CSOs. GCF always likes to support that type of engagement with CSO and other private sector entities (I2 Climate finance officer, XB).”

GERES NGO: “Switch off air pollution” project aims to equip communities and private sector with the tools to alleviate air pollution in Mongolia, further its goal is focused on improving housing energy efficiency by the context-based technical and design solutions for the construction sector and shaping the behaviour into more sustainable consumption and building patterns (GERES, 2018). The project has closely collaborated with XacBank’s green loan initiative and Ulaanbaatar Municipality, and it also coordinated with local and international partners: People in Need²¹, Ger Community Mapping Center, the Mongolian National Construction Association and Mongolian University of Science and Technology’s Building Energy Efficiency Centre.

In addition, GCF has established a co-financing obligation so that it would not be only entity financing the project (I2 Climate finance officer, XB).

In terms of information support to CSOs, commitment by government is lacking especially, transparent issue related to government agencies. On the other hand, there is lack of follow up and monitoring from CSOs, and so strengthening capacity building of NGOs is important at the moment according to ERC (I1, ERC, MoE). For instance, proposals requested by NGOs are only considered and discussed further if they are in line with energy policy.

“Government agencies need to be transparent about how they report on what they are doing and how they are involved. This will increase the participation of NGOs.” (I1 ERC, MoE).

Energy CSOs within the arena of other CSOs is very limited. Apart from MRIA, currently there is no active energy NGOs operating in RE sector (I3 MRIA). Indirect but related NGOs are Mongolian Sustainable Finance Association (MSFA) and Breathe Mongolia- Clean Air Coalition. Specifically, MRIA cooperated with MSFA to support funding RE technologies (e.g. small scale) through low-interest green financing and loans. In the future, MSFA is going to be an another CSOs which work in the area of RE development to promote not only sustainable finance but also private sector inclusion through its initiative. This is also good example of mainstreaming sustainable development and climate change in Mongolia through CSO initiatives and commercial banks. Furthermore, MSFA’s member banks developed eight principles (Box 3) which will be a benchmark for commercial banks for financing activities in line with sustainable development (MSFA, 2018). Specifically, MSFA’s principle four is focused on promoting green growth, including RE. Meanwhile, MSFA is also a good example of development co-operation that World Bank Group supported the initiative which then led to establishment of an independent local NGO (MSFA, 2018). Recent big achievement of MSFA is development of National Green Taxonomy, which also referenced by World Bank along with other taxonomies including EU Taxonomy.

Box 3. Lessons learned: Transferring private finance to green growth and sustainability areas

Lessons learned: Transferring private finance to green growth and sustainability areas

To promote sustainable development and green growth, Mongolian Sustainable Finance Association (MSFA) was established by the Mongolian Bankers Association in 2017 with the support of World Bank Group (MSFA, 2018). Its main operation includes supporting the green financing system and assisting Mongolian finance and business sectors to adopt activities which benefit both the environment and the society, through consultation and sectoral guidance (MSFA, 2018). Currently, the MSFA successfully cooperated with all 15

²¹ People in Need is a Czech non-governmental, NGO active all over the world.

commercial banks through its membership network. Further, it aims to expand the network in non-financial sectors (e.g. academia, textile, manufacturing, agriculture, mining and construction).

“Our members have united to implement the MSFA principles, adopt environmental and social management systems in their day-to-day operations, and contribute to the sustainable development of Mongolia.”

Eight principles of MSFA: (i) Protecting our national environment, (ii) Respecting human rights (iii) Protecting our historic and cultural heritage, (iv) Promoting “green growth”: to support and encourage RE, energy efficient solutions clean production and any green initiatives, (v) Promoting financial inclusion, (vi) Complying with a list of items prohibited to be financed, (vii) Promoting transparency and accountability, and (viii) Practice what we preach.

4.6 Assessment of Transparency and mutual accountability

Indicator, criteria assessment		
T1. Development finance for RE has been disbursed as commitment	Not satisfactory	<i>Not satisfactory</i>
T2. Bilateral development partners enable RE energy procurement without geographical constraints (untied)	Satisfactory	
T3. Enhanced Country Policy and Institutional Assessment (CPIA) (i) Transparency, accountability and corruption in the public sector rating (ii) Quality of budgetary and financial management rating (iii) Gender equality rating (+ Rio Marker for gender objective)	Not satisfactory	

Overall assessment for transparency and mutual accountability is resulted *not satisfactory* due to the gap between commitment made by donors to RE development and actual disbursement, and (T3) not satisfactory results in transparency, accountability and gender equality. The gap between (T1) commitment made by donors to RE development and actual disbursement (See Section 4.1.4) and (T3) not satisfactory results in transparency, accountability and gender equality.

Assessment of disbursement ratio (T1) and untied aid (T2) are described above in Section 4.1.4.

4.6.1 Assessment of T3. Transparency, accountability, budget management and gender equality at country and RE sector

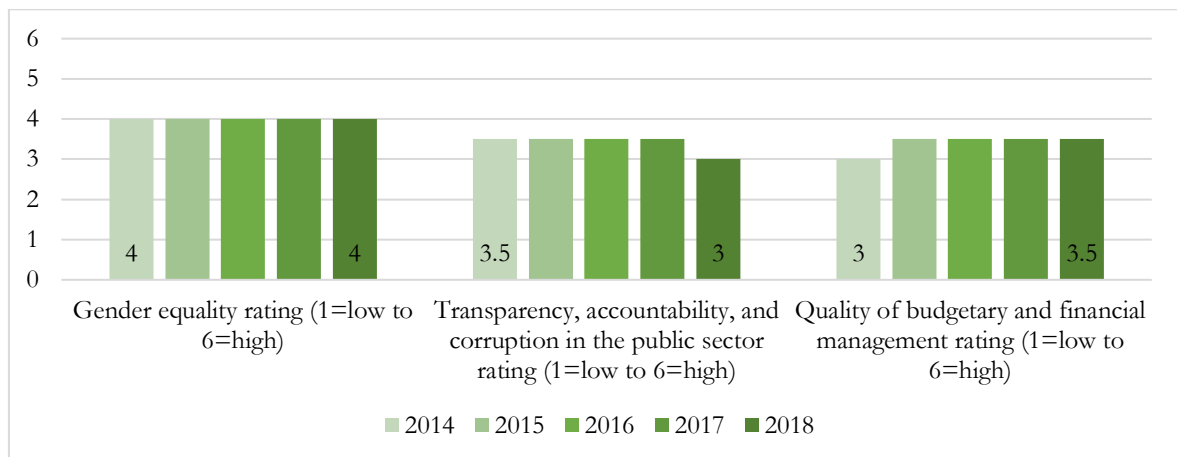
4.6.1.1 Quality of budgetary and financial management

Well-performing country systems can enable development finance transactions in an efficient, effective and sustainable manner (WB, 2012; ADB, 2014). From the financial perspective, donors often see how the recipient government has responsibility for using development finance well. In practice, international development partners provide loan or grants directly to the government official, then the government decides how to spend it (T1 ERC, MoE), hence management of budgetary and financial management in RE related development finance is handled by a higher level of governance between the Ministry of Finance (MoF) and the MoE. While screening the General Budget Performance, total flow of general development assistance is outlined in the State Budget (MoF, 2020). The MoE budget report is also prepared by the MoF through publicly available account (so called Shilen Dans) which contains the development assistance flow, yet it is hard to distinguish by donors, sub-sectors (e.g. RE) and projects (MoF, 2015). In general, there are many actors involved in the RE development finance in terms of budgetary and financial management and lack of aggregated available information makes lead to the unsuccessful result. Generally, it was already stressed by the latest aid monitoring report of Mongolia (UNDP & OECD, 2016) that there was *no strong coordination mechanism* for donors

that less than 10% of development co-operation was recorded on budget including Czech Republic, IFC, the United States, Turkey and the World Bank, and rest of development partners were not reflected on budget.

World Bank’s assessment on Quality of budgetary and financial management may explain the government and related ministries operation towards development finance including RE. The result shows that the country needs high importance of improvement of quality of budgetary and financial management given that Mongolia’s rating in quality of budgetary and financial management fell by 0.5 degree since 2014. Low rating of budgetary and financial management may relate to either of three dimensions: (a) a comprehensive and credible budget, linked to policy priorities; (b) effective financial management systems to ensure that the budget is implemented as intended in a controlled and predictable way; and (c) timely and accurate accounting and fiscal reporting, including timely audit of public accounts and effective arrangements for follow up (WB, 2017).

Figure 13. Country Policy and Institutional Assessment in Mongolia for selected ratings, 2014-2018



Source: CPLA (WB, 2019b, 2019c, 2019a)

4.6.1.2 Transparency, accountability, and corruption in the public sector

At the country level, Mongolia’s rating on transparency, accountability and corruption in the public sector showed a medium rating 3.5.

The rating has increased since 2014 by 0.5 degree. According to the World Bank’s criteria (2017a), the countries assessed at this category, there are several gaps. Decision making is not generally transparent and public dissemination of information on government policies and outcomes is a low priority. Other transparency issues relate to publicly available budget documents and limits to the media for information gathering and scrutiny (WB, 2017a). Regarding the challenges on accountability, external accounting mechanism may have inadequate resources or authority, anticorruption is opposed by the political aspect, mistrust between citizens and state (e.g. citizens claims against the state) (WB, 2017a).

In the context of corruption, the recent big news related to the development partners is about the EU blacklist of non-cooperative jurisdictions for tax purposes. Mongolia warned that it is close to being included in the blacklist due to unqualification of tax jurisdictions. Basically, being included in the blacklist means the risk of losing access to EU funds. Such reasons that led Mongolia to be scrutinized is the lack of considerations of a tax treaty (e.g. cancellation) with Netherlands in one of the largest copper mines “Oyu Tolgoi” as well as other development

partners Kuwait, Luxembourg and the UAE (Reuters, 2017). The latest update of the list (KPMG, 2020) explained Mongolia is still at the edge of being included in the jurisdictions despite its effort of qualifying requirements. Therefore, it is required that in order to be safe from the blacklist, Mongolia needs to deliver the commitments to OECD's Multilateral Convention on Mutual Administrative Assistance followed by the ratification deadline of August, 2021 (KPMG, 2020).

In terms of energy sector, MoE explained number of projects funded by development partners including World Bank and ADB, general energy projects tender and procurement process are available shown in the website (MoE, 2017b) which then qualifies the *satisfactory* rating for transparency of MoE operation although there is no differentiation of sub sector projects such as the RE sector. The interview found that MoE is accountable to the main policy target results such as RE capacity and RE generation (I1 ERC, MoE). The aid monitoring assessment (UNDP & OECD, 2016) also argued that there was lack of participation from parliament for a joint planning and budget modalities.

Furthermore, when it comes to lower level government structure, accountability is *not satisfactory* in the context of RE. For example, National Renewable Energy Center (NREC) does not have coordination system for projects funded by the development partners, even though there is little project information found in the website; its operation seems *not satisfactory* in terms of being accountable to MoE and development partners for RE development finance. Similarly, there is a lack of accountability in tracking results from the MoE for the private sector's climate finance - e.g. XacBank's projects (I2 Climate finance officer, XB).

4.6.1.3 Gender equality

Even though energy sector in Mongolia is male dominated (I3 MRIA), there is no common understanding of gender equality related to energy at the different level of actors. The interview found that private sector representatives' organization or government officials ever track or monitor the results of the RE and energy efficiency projects (I2 Climate finance officer, XB). Also, there is a lack of research and assessment that has been done in Mongolia's RE sector associated to gender (I3 MRIA). Overall assessment resulted in a *not satisfactory* rating.

It is found from one interview that there is an increasing trend for women workforce in the RE sector (I3 MRIA) as well as in the institutions and development agencies.

Meanwhile CPIA assesses the gender equality by assessing institutions and programs to enforce laws and policies promote gender equality in three areas: human capital development, access to economic and productive resources, and agency for change and equalization of status and protection under the law. The assessment shows that CPIA, gender equality rating has not changed for the last five years, resulting rating 4, meaning that Mongolia has mechanism to enforce the gender law and institutions (NCGE, 2019) to guide the achievement of gender equality yet there are still some improvements needed.

From the donors' side, there were three development partners namely, GCF, Switzerland and Germany, marked commitments to RE and energy efficiency that have the gender objective of Rio marker, which is explicitly stated, but it is not a fundamental driver. While the rest of donors (commitments since 2015) marked "null" for gender objective, meaning that activity was examined but found not to target the gender objective in any significant way. Donors mark principal mark "2" when the gender objective is explicitly stated as fundamental in the design of, or the motivation for the activity assessment found that there was no project with principle mark for RE development finance.

Furthermore, ADB, World Bank, CIF, GCF has gender classifiers, markers included in the result indicators. For example, GCF specifically highlights gender composition through the project disbursement (Box 4). Whereas other donors did not set specific result target for gender classification.

Box 4. Lessons learned: Increasing gender consideration through gender assessment report

Lessons learned: Increasing gender consideration through gender assessment report (GCF)

“The GCF requires gender to be built into every funding proposal in the form of a gender assessment, gender action plan, and gender-mainstreamed results indicators. For example, XacBank’s Business Loan Program for GHG Emission Reduction provides a lower interest rate to women-led businesses and was designed such that 50% of loans have to be disbursed to women-led businesses.” (12 Climate finance officer, XB)

When is a gender analysis/assessment used?

GCF suggested that gender analysis should take place early in the planning process of the development intervention. GCF requires that all projects and programs should implement gender analysis, including data on gender issues in a comprehensive way (GCF, 2019b).

GCF’s template (2019) on Gender Analysis/Assessment and Gender and Social Inclusion Action Plan are open publicly; it contains the critical questions related to gender for a intervention and program. The template explains (GCF, 2019b) explicitly the Mitigation and Adaptation and inclusive private sector that can also be used by other partners. For example, the template contains the impact, outcome and output states, gender-responsive activities, gender performance by indicators and targets, approximate budgetary allocation against each activity (GCF, 2019b).

5 Discussion

This chapter is divided into four sections, integrating the existing studies on similarities and differences. The first part is the discussion on RQ1 Tracking the development finance to RE, and this section ends with findings related to the limitation of development finance data. The second part is integrated discussion of RQ2 and 3 in four areas: 1) Policy alignment and institutional capacity, 2) Achievement of results for sustainable energy and RE, 3) Enabling environment for private partnership and CSOs, and 4) Fiscal stability and Gender consideration. Later, the author reflects on the effectiveness framework and limitations of methodology in sections 5.3 and 5.4, respectively.

5.1 Tracking development finance to RE (RQ 1)

The literature showed that the inflow of ODA into Mongolia's energy and environmental sector in Mongolia was low until 2016 compared to other countries (UNDP & GoM, 2018). This research finding found that since 2016 development finance commitments are increasingly mobilized to RE sector in Mongolia. This is in line with other studies (Atteridge & Savvidou, 2019) that it is observed an increasing trend toward funding for RE in developing countries. During this period from 2015 to 2018, it was expected to see an increase in financial flows for RE following the pledges under the UNFCCC Paris agreement (UNFCCC, 2015b). Therefore, the increase seems to be in line with the objective of global development finance which has shifted to support low-carbon economy transitions and sustainable energy (OECD, 2017, 2018a). It should be also noted that disbursements are lower than commitment overall volume, OECD DAC (2019) says that disbursement often take several years to paid out however it is not standardized that how long is the average lagging years of disbursement in terms of RE interventions.

Even though the studies (OECD, 2019a; Tara & Gisela, 2016) found that globally there is a great deal of debate around the distinction between climate finance and development finance this the assessment found that there is synergies between them when it comes to financing RE in Mongolia. This also proves that RE is bridge between development and climate finance (IRENA, 2019, 2015; UNESCAP, 2018.; Van de Ven et al., 2019). In Mongolian, there were many RE projects funded by the existing development partners (e.g. ADB, World Bank, EBRD, Japan) which are already familiar with the government officials more than climate funds or climate-specific organizations (e.g. CIF, GCF, GGGI). In this regard, no distinction between development and climate finance in the context of RE was suitable in the Mongolian case. Moreover, it is found that not all development partners closely work with MoE. For example, ADB, World Bank and EBRD are the main partners from which government officials often seek advice and co-operation (I1 ERC, MoE).

In Mongolia, nevertheless there were several gaps and similarities found among international development banks (e.g. World Bank, ADB, EBRD) and climate funds or climate-specific institutions (e.g. GCF, CIF, GGGI), bilateral donors (e.g. Korea, Czech Republic, Japan, Germany, Denmark, China) in the development of RE project. For example, both international development banks and climate funds have project level assessment tools, which then enables the research process (e.g. access to project document or information containing intended results, impacts and independent evaluation). This is also confirmed by the findings of the CPI report (Chaum et al., 2011) that M&E tools can improve the effective results. Tracking RE finance from bilateral donors (e.g. Korea, China, Czech Republic) was limited because detailed project documents are not found. In the case of China's development assistance, it lacks the possibility for further assessment, unlike other development partners it only assists a hydropower project (EHPP) financially but not implementation or further development of the project. This may be

critical because the implementing team of EHPP may have independent responsibility of finishing the project without further monitoring and co-operation with development partners. While, the previous Eg hydropower plant project received a number of criticisms from neighboring countries Russia and China due to environmental and transboundary river issues (Simonov, 2017). Therefore, to implement the EHPP project successfully, there is need for independent monitoring and evaluation.

5.1.1 Development finance data limitation, lack of tracking mechanism

The findings suggest that the development finance database from Aid Atlas (SEI, 2019) is comprehensive enough to track donor trend, and it gives an overall picture of sectoral flows in the recipient country. However, it lacks granularity when it comes a detailed sectoral assessment from a country perspective.

Development finance data is filled for activities, by donors; hence it is difficult to identify the specific projects that are supported. Issues related to tracking data and its transparency and consistency are also stressed by the studies (Atteridge & Savvidou, 2019b; Huang & Pascual, 2017; Sethi et al., 2017). Specially, some donors provided the project name and further details, but there is no consistency over time. There are a few transactions transferred to one project, hence each time, the project name changes (e.g. Upscaling RE project), making it hard to filter and distinguish by the project. In addition, the findings reveal that often there are one or more donors collectively financing a RE project (e.g. CIF, ADB, World Bank – Upscaling RE project and EU institutions, EBRD, Denmark – Sainshand Wind power plant) but no mutual data is provided in terms of project description in the development finance platform.

In general, the lack of details makes the assessment of the effectiveness of development and climate finance on a project basis very challenging. In turn, this undermines a national perspective. From an analytical perspective, the lack of technical sectoral details was the major challenge for the analysis of alignment of development finance and RE projects. Therefore, one solution would be that at the country level, if there is a specific department or institution that monitors and collects information about all the donors and their funded projects. If the information is publicly available to analyze, then it is feasible to do so. Unfortunately, this is not a common practice.

5.2 Alignment and Assessment of effectiveness principles (RQ 1 and 2)

5.2.1 Policy alignment and institutional capacity

In the literature (B. N. Bird & Glennie, 2011; N. Bird et al., 2013; OECD & UNDP, 2016; UN, the policy aspect and alignment are the most repeated factor which can define the effective development and climate finance. In Mongolia, the aid effectiveness monitoring assessment 2016 (UNDP & OECD, 2016) found that majority of development partners are aligned with country policy framework, which is further proven in this thesis. Firstly, development partners and their RE interventions are led by the country-specific RE policy framework, and RE interventions are initiated or led by the government entities and private sector, which ensures effective policy alignment and ownership (Assessment results 4.3.1 and 4.3.2).

Strengthening local institutions is another factor of effective development co-operation (B. N. Bird & Glennie, 2011; Carothers, 2015). What really impacts this factor seems inclusive country system (e.g. how high-level government institutions closely work with lower level of institutions by sharing knowledge – from the Government of Mongolia, MoE to ERC, NREC) and co-

operation between development partners and local institutions, hence accountability. Institutional quality is undermining aspect of effective development finance (UNDP, 2013) that is also shown from our assessment on energy sector: i) lack of development partners' commitment for energy research and energy education (Assessment 4.3.3), and ii) some interviewees' unsatisfactory response towards institutional practice (Assessment 4.3.4). This also evidenced that there are few SDG specialist in the energy governing institutions (I5 RE Association). On the other hand, there was number of commitments made by the development partners for energy policy and energy efficiency in Mongolia, which may strengthen the institutions from policy aspect. It is found that GCF's Project Preparation Facility (Box 1) is a good example of how development partners can build the stronger institutions.

5.2.2 Achievement of results and sustainable RE

At the global level, to scale up RE, target setting should be comprehensive not only in electricity but also cooking, heating & cooling, and transport (IRENA et al., 2018; UN DESA, 2019; WB, 2017c, 2018b). The RISE country profile shows that Mongolia ranked in the "red zone" with the score of 29 for sustainable energy and RE in 2017 due to lack of specific targets for renewables in electricity, heating & cooling, and transport. Since then Mongolia updates with several changes in the planning and deployment of RE in other sectors is under the assessment (GGGI, 2013; NAMA, 2015), for example, an electricity target is set at the target and indicator level while deployment of RE in heating and transport has not been set at the target level yet (GoM, 2015a). Based on the assessment and despite the number of effort²² in combating air pollution of Mongolia (WB, 2019c; WHO, 2019), RE target setting in heating & cooling is urgently needed from the policy perspective so that development partners can collectively align with the new target through their development interventions. In the case of the NAPS strategy, it is aligned with the national RE target but also aimed to contribute to the regional level by reducing the carbon footprint of the power system (ADB, 2017; NovaTerra, 2019) (I4 Energy Associate). Furthermore, it has already started attracting potential political and investment interest in the RE sector that Mongolia can be hotspot of RE electricity export to Northeast Asian countries.

Progress towards increasing RE capacity has been successful, contributing to the achievement of NDC and national energy policy goals (ERC, 2019; GoM, 2019) (Section 4.4.1.2 and Figure 12). Despite the increasing number of RE power plants, there are some technical issues (e.g. lack of capacity in the existing transmission network) hindering the further achievement of RE target in electricity. This was also addressed by the studies (GGGI, 2013; IRENA, 2016). While to tackle such technical issues, some efforts are in under development, including the deployment of hydropower, battery systems and pump storage (I1, MoE ERC). Similarly, energy assessment for SDG7 (WB, 2018b) highlighted that Mongolia needs greater effort to increase the electricity access from RE (WB, 2018b). On the bright side, according to SDG7 assessment (WB, 2018b), Mongolia ranks at the second with the highest rates of access to off-grid supply that roughly 80% of Mongolian population uses solar home systems.

Furthermore, there can be some trade barriers such as the dispatching rule and low fossil fuel prices that limit the deployment of RE (IRENA et al., 2018). In Mongolia, current dispatchers have low cost principle where the cheapest electricity is loaded first (I1 ERC, MoE). However, it can be discouraging if the RE system has higher price. For example, as the largest producer company thermal Power Plant 4 sell the lowest amount of kWh electricity.

²² no electricity rate at night, changing traditional stoves by cleaner ones (I1 MoE, ERC).

5.2.3 Enabling environment for private partnerships and CSOs

It is suggested by the GPEDC & UNDP (2018) that effective development finance can also enhance the private-public dialogue. In terms of RE sector, there was enhanced dialogue through the regulatory change. For example, to support the private sector, new RE law made several progresses such as reducing RE tariffs and introducing auction system (I1 ERC, MoE, I3 MRIA). According to IRENA, IEA & REN21²³ (2018) auction system reflects the falling cost of RE technology, hence it can enhance public-private dialogue because it ensures transparency and commitment (IRENA et al., 2018). This was also occurred in our assessment. Furthermore, the auction increases the competition among existing RE producers, despite the limitation that it may limit the small players in the RE market, hence success of auction depends on appropriate design that also enable FiT for small scale installations (IRENA, 2015b).

In addition, there was support from the Renewable Industries Association (MRIA) in enhancing private public dialogue between RE producers and public entities in Mongolia. It is suggested from GPEDC that the consultation of CSOs can enhance inclusive partnership (OECD & UNDP, 2014; GPEDC & UNDP, 2017). In practice there was a lack of consultation with MRIA in the design of the RE interventions from development partners. It should be noted that there is also a low number of CSOs operating in the energy sector (MRIA is the only active NGO) (I3 MRIA), hence the influence of CSOs in the project development and monitoring is lacking. The assessment found several good examples during the interviews. For example, MSFA's operation (Box 1) is a potential bridge between public and private sectors and CSOs in advancing sustainable businesses in Mongolia, including the RE sector (MSFA, 2018). Similarly, GCF's accredited entity XacBank is actively engaged in promoting RE at a small scale. Moreover, another local bank, Trade & Development Bank (TDBM) recently received the accreditation from GCF in April 2020 hence it can also increase the number of new RE interventions in the country (GCF, 2020).

5.2.4 Fiscal stability and Gender consideration

Country economic and fiscal stability is scrutinized by the scholar (Shine & Campillo, 2016; UNDP, 2013; UN, 2015b) that hinder the development and climate finance. This would affect the development finance to RE sector in Mongolia. For example, major two risks impeding Mongolia's fiscal stability from global perspectives are 1) risk of losing EU funds due to EU blacklist of non-cooperative jurisdictions for tax purposes and 2) no improvements in the CPIA rating of the quality of budgetary and financial management.

Public financial management system was also criticized in the literature at the country level. budget subject to parliamentary oversight was also stressed by the GPEDC assessment (OECD & UNDP, 2016). However, from this research, the MoE is assessed transparent in term of information sharing on procurement and tendering, there are further implications needed for the general coordination of development finance and aggregated budget information by Ministries and donors.

In addition, studies and OECD (Clay et al., 2009) proposed untying aid can enable the effective development co-operation. The assessment found that development finance to RE (only donors who reported) is fully untied hence effective procurement without geographical restrictions. However, the limitation is that not all the donors report the data for RE intervention as tied, untied, or partially untied.

²³ A worldwide community of players, RE for the 21st Century.

Globally, gender issues for sustainable energy (e.g. access to clean cooking and heating) has received high importance (Gallagher et al., 2014; Piebalgs, 2012; WB, 2018b). However, it seems there is lack of attention paid by local institutions in Mongolia. It is also found that Mongolia does not have gender tracking system in the energy and RE sector neither classifiers in the SDG 7 (NCGE, 2019; NSO, 2020). Similarly, at the country level, Mongolia's CPIA rating on gender equality has not changed since 2014. OECD (2016) suggested to track gender objective of development finance by using Rio marker, but the analysis revealed that not many donors did not mark gender section "significant" in their RE interventions (See Assessment 4.6.1.3 Gender equality). Thus, rio marker of gender was neither ineffectively used by donors nor does not fully attributed to RE interventions in Mongolia

5.3 Reflections on the Usefulness and Contributions of the Analytical Framework: Subjectivity

Even though this paper attempted to include practical perspective for the methodology, a lack of common understanding among stakeholders on the effectiveness principles' definition remains.

Subjectivity of effectiveness principles and lack of measurement for follow-up research. Seeing at the development and climate finance argument and effectiveness issues whether they impact on the ground, the methodology for follow up analysis is lacking also due to the fact that defined aid effectiveness principles are subjective in a way to measure and set indicators and criteria under principles, based on this independent research and findings from interviewees. Whereas aid effectiveness monitoring (GPEDC, 2015) and assessments (OECD & UNDP, 2014, 2016, 2019) are supported by development partners and country institutions hence it has enough capacity to collect all donors' perspective; indeed it is voluntary work and there are some donors not included in the effectiveness monitoring assessment. Furthermore, there is a lack of consistency and country assessment (e.g. no assessment conducted in Mongolia as of 2018's effectiveness monitoring).

Global monitoring of country *ownership* is contradicted with country actors and sectoral level in terms of definition and factors. For example, in the monitoring framework of ownership (GPEDC & UNDP 2018), ownership is monitored by financial and budgetary system and countries' spending finance well or development finance directed transparent. Whereas our developed approach is based on definition of ownership which is more about policy alignment and institutional capacity and how the recipient leads the development and climate finance through its defined country-specific policies in the context of RE. Our interview results showed that understanding of ownership is focused on how country public institutions work and lead development interventions within the project level. Therefore, our proposed methodology to assess this principle is in line with the definition and some practitioner's perspective— policy alignment and capacity building of institutions. Yet a different approach for ownership exists in the global monitoring framework at the country level (GPEDC & UNDP, 2018), mainly focused on management of public finance which seems more relevant to the transparency principle. That is the reason I moved some indicators (untied aid, public expenditure and financial accountability) from ownership to transparency.

Focus on results is another contested principle that can have many meanings. In terms of methodology, there is an absence of internationally agreed measurements to assess this development finance effectiveness principle for RE sector. In the literature (Chaum et al., 2011; UN, 2015a), it is found that results are focused on either project level results followed by M&E or achievement of sustainable development and climate targets in the context of RE. Yet, there

are still attribution issues when it comes to development finance to RE which is why assessing results indicators may be insufficient; therefore, alignment of results framework developed by development partners or implementing agencies is added. Our proposed methodology is guided by the sustainable energy indicators (WB, 2016) that are still in the *policy arena* because this thesis is specifically looking at target setting of country policy and how donors and RE projects design results indicators in line with country proposed RE result target.

Inclusive partnership of private sector and CSOs was the less-often repeated factor identified in the literature. In fact, the concept of mutual accountability and stakeholder's analysis could overshadow it. Therefore, distinction from other principles is focusing on private public dialogue and consultation with CSOs in the design and implementation of the RE projects from the donor side and in design of the policies from government bodies. This part of analysis may require a lot of time if there are many CSOs and private sectors in the selected market.

Transparency and accountability. From the literature, transparency is defined differently based on the context. In fact, it has a lot of different meanings when it comes to effectiveness of development finance to RE, making it the most confusing principle (e.g. data and information transparency, transparency of institutions, corruption, budget system, procurement, transparent operation among key actors). Indeed, the entire assessment and section 4.1 and matching data exercise of this paper connects to the increasing transparency by revealing and collecting the existing data and perspectives of development finance to RE in Mongolia in a systematic way. Our chosen indicators for the effectiveness principle serve only as a proxy of some areas, hence achieving a better assessment for transparency and mutual accountability of development finance to sector (e.g. RE) requires more support from the country institutions and development partners.

5.4 Limitation of Methodology

In addition, the author acknowledges several limitations and concerns associated with proposed research design. Throughout the development of this thesis, various methodological challenges were evident with direct implications for the findings.

The small sample size of interviewees may be the limitation of the contribution towards each principle in this research paper. Although the perspectives of interviewees used to confirm the some of the indicators in terms of their expertise, their response can be one-sided (subjective) hence increasing the number of practitioners for interview method can strengthen the results. There is also limitation related to generalisability such as case study method. Another gap of development finance data is that some development partners, especially bilateral and private international banks, do not fully report the project purpose information and long description. For example, EBRD has several blank transactions, and Japan's TC aggregated activities do not make clear the project. Therefore, the review of project documents was useful approach.

Other limitations of the methodology may drive from criteria and rating/assessment. Developed criteria are developed using traffic lighting rating to help reader to distinguish the magnitude. Thus, it needs further improvement in the criteria.

6 Conclusion

The aim of the study has been to track development finance data to RE in Mongolia and to develop an analytical framework and propose indicators and criteria for effectiveness principles. In the following sections, conclusion of the study, recommendations and future research areas are presented.

6.1 Addressing research questions

RQ 1: What is the state of development finance to energy and RE in Mongolia? (e.g. flows, main actors, main purpose, main sectoral recipients)?

Energy generation from non-renewable sources (mostly from coal) was still significant, by receiving a large amount of assistance from development finance up until 2014. Since then, there has been a transition towards RE project development. Specifically, development finance targeting energy in Mongolia has increasingly focused on RE and energy efficiency. Sources come from multilateral donors and climate funds, including the World Bank, ADB, EBRD, GCF, and CIF, as well as bilateral donors such as Japan and Germany. In terms of South-South co-operation, China's development finance for the Erdeneburen hydropower plant was only directed to support the project financially. However, further follow-up with regards to working of the local institutions remains unknown.

It is found that the MoE has closely worked with international development banks on policy development and energy regulation (e.g., World Bank, ADB). Additionally, EBRD, Japan, and EU institutions have a direct influence on the deployment of RE technologies (e.g., solar and wind). From the national side, commercial banks such as XacBank were found to have an important role for scaling-up of RE in Mongolia through the accreditation process with climate funds. Similarly, NGOs (e.g. MRIA, MSFA, GERES) were also found to play a crucial role in strengthening the dialogue between government officials and private sector.

RQ 2: To what extent is development finance to RE aligned with international and national commitments (e.g. national energy and development plan, SDG7)?

Most development finance partners are in line with the national policy priorities through their results, framework and objective of the RE projects. At the national level, the energy sector is key for meeting the NDC targets of the Paris Agreement (GoM, 2019). Here development finance from ADB, EBRD and Japan play an important role to reduce GHG emissions through various climate mitigation projects.

While there is also an increasing amount of international development and climate finance mobilized to RE in Mongolia, the role of coal remains significant in the policy and energy mix. For the government, the situation has generated criticism in the context of sustainable energy and climate change. Besides, the transition to RE is sluggish to achieve the energy-mix target due to insufficient distribution from RE power plants, low dispatching priority for RE and lack of battery storage. This also leads to the lower achievement of Green Development Policy goal and overall RE deployment. Lack of comprehensive target setting in district heating and power, clean cooking and transportation further hinder the achievement of SDG7.

National energy policy prioritizes energy security, safety and affordability; hence scaling-up RE is highly important for the national energy strategy. More importantly, hydropower plant is considered high importance from the policy arena in Mongolia, yet there are challenges such as criticism with previous hydropower plants. Also, the findings reveal that only financial support

(Erdeneburen Hydropower plant with development assistance from China) is not enough to implement the project successfully and that a transparent monitoring system for results and inclusive partnerships is needed. As mentioned earlier, there are also issues related to the current RE system. Therefore, MoE is currently working on battery storage with the support of ADB and the private sector.

RQ 3: To what extent, are development and climate finance for RE in Mongolia sustained by effectiveness principles?

The assessment reveals that multilateral donors, including international banks and climate funds, are concerned about many factors that effectiveness principles encompass. However, these are not fully reached to the level of local public institutions and CSOs such as NRAC and MRIA respectively. There is a lack of mutual accountability, capacity building and inclusivity of the CSOs. In terms of policy alignment, Mongolia's RE target setting is not integrated with other sectors that call for efforts from development partners and local institutions.

Ownership and policy alignment are effective in that RE interventions funded by development partners have been supporting the country-specific policies in line with RE capacity target and NDCs. However, the institutional capacity of ownership is unsatisfactory due to low commitments made to energy training and research.

Focus on results of development finance to RE in Mongolia has mixed effectiveness due to lack of publicly available information of some bilateral donors, which did not publish intended result, indicators and monitoring tools. Furthermore, many multilateral donors (e.g. ADB, World Bank, GCF) have result indicators that are aligned with the country's set targets. This may increase the effectiveness of development finance to RE. In general, the reduced GHG and installed RE capacity are effective, yet further implications for RE development is not satisfactory in terms of results and achievement of sustainable energy target.

The inclusive partnership resulted in low effectiveness due to the low number of public-private partnerships (PPPs) in RE infrastructure, especially owing to the lack of sustained inflow of public finance. Especially, there is no regular consultation with CSOs, and most consultations are made in an occasional way from public and private sector as well as development partners. In addition, there is a lack of information and the necessary financial support that enable the CSOs active operation towards RE development.

Transparency and accountability of development finance to RE is not effective due to decreasing disbursement made by donors against commitments, lack of understanding of gender equality in the RE sector, and lack of integration of local institutions. On the other hand, donors have not set the geographical restrictions which satisfy effective transparency around procurement in terms of value-for-money.

6.2 Recommendations and future research

Based on the findings, some key policy recommendations for Mongolia can be drawn from this thesis. The main takeaway is that in Mongolia, independent monitoring mechanism, to track the development and climate finance for energy and climate-related activities, is missing, especially at the sectoral level. Therefore, tracking the donors' information by using Aid Atlas and applying effectiveness principles can be useful for the policy design and effective development co-operation.

Rest of the recommendations in context of finance, management and energy sector are as follows.

Table 11. Policy recommendations

Integrated result indicators and target setting for capacity buildings	The mandatory requirement of building results framework for the development interventions can increase the effective monitoring hence results. For result indicator of the development interventions, target setting for capacity building local staff and institutions are important addition.
Enhanced monitoring through co-financing	Co-financing with multiple donors can be useful for the large scale RE projects such as hydropower plant so that it prevents the risk of project delay and environmental impact assessment. It can enhance mutual accountability and monitoring, hence effective result and communication.
Increased data quality by donors in OECD CRS database	From the donor side, completing full information and description of the development interventions/projects can be useful for the country and sectoral assessment. When filling the information, the accurate classification of sub-sectors is crucial as well as marking "Rio-Marker" and "Untied aid" sections. In case of co-financed projects (more than one donor financing), there should be mutual information in the development finance database.
Strengthen the co-operation with climate funds and CSOs: Learning from good lessons	By adopting the good practices from climate funds such as GCF, GGGI, Mongolia can enhance the effective development co-operation (See Lessons Learned Box 1, 2, 3 and 4. Strengthening institutions by Project Preparation Facility, Promoting NGOs by grant financing, Building local NGO as a result of development intervention, Transferring private finance to green growth, Increasing Gender consideration through the assessment report and results indicator). Inclusive CSOs and private sector engagement are especially crucial for accountability.
Integrated RE policy framework in line with sustainable energy	It is urgently important to set RE target setting in district heating, clean cooking, transport in Mongolia. Furthermore, policy alignment could be enhanced more with the improvement by integrating NDC and SDGs in the energy policy and strategies.
Dispatching priority for RE	Introducing dispatching priority for RE power plants can encourage private producers in advancing the transition from coal to renewables.
Information and knowledge sharing	Given that mutual accountability mostly lacks among ministries and low level of government institutions in Mongolia, sharing economy and platform is suitable to increase the knowledge on the role of RE in advancing sustainable development and climate change mitigation as well as RE's linkage with other SDGs (e.g. sustainable production and consumption, education, health).

It was observed that there is increasing trends on development and climate finance commitment towards energy efficiency since 2015, further research on this field would be useful in the context of Mongolia. Also, addressing the limitation of methodology and data would be important areas to fill the research gaps (See sub-chapter (i) Scope and Limitations (ii) Development finance data limitation, lack of tracking mechanism (iii) Reflections on the Usefulness and Contributions of the Analytical Framework: Subjectivity, and iv) Limitation of Methodology).

With the Aid Atlas and OECD DAC database, it is feasible to track other environmental areas in Mongolia (e.g. disaster prevention & preparedness, water supply & sanitation, agriculture and forestry). This may also be applicable to other countries. Indeed, further sectoral and country-level studies can be useful for the implementation of policy design, strategies and monitoring of SDGs. To assess the effectiveness principles for other sectors, the analytical framework developed in this study can be used with modification to address sector-specific particularities. The analysis may require interdisciplinary assessments both in data analysis and the selected sector. Finally, this study opens up ample opportunity for valuable academic and professional research, and a case study that not only carries lessons for Mongolia's broader environmental initiatives, but for similar contexts as well.

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Appendix 1: Development finance database classification and definitions (OECD DAC CRS)

Table 12. Development finance database classification and definitions

Sub sector of categories	Purpose, definitions
Energy policy	
1. Energy policy and administrative management	Energy sector policy, planning; aid to energy ministries and other governmental or nongovernmental institutions for activities related to the SDG7; institution capacity building and advice; tariffs, market building, unspecified energy activities; energy activities for which a more specific code cannot be assigned.
2. Energy regulation	Regulation of the energy sector, including wholesale and retail electricity provision.
3. Energy education/training	All levels of training not included elsewhere.
4. Energy research	Including general inventories, surveys.
5. Energy conservation and demand-side efficiency	Support for energy demand reduction, e.g. building and industry upgrades, smart grids, metering and tariffs. For clean cooking appliances use code 32174.
Energy generation, renewable sources	
1. Energy generation, renewable sources - multiple technologies	Renewable energy generation programmes that cannot be attributed to one single technology (codes 23220 through 23280 below). Fuelwood/charcoal production should be included under forestry 31261.
2. Hydro-electric power plants	Including energy generating river barges.
3. Solar energy for centralised grids	Including photo-voltaic cells, concentrated solar power systems connected to the main grid and net-metered decentralised solutions.
4. Solar energy for isolated grids and standalone systems	Solar power generation for isolated mini-grids, solar home systems (including integrated wiring and related appliances), solar lanterns distribution and commercialisation. This code refers to the power generation component only.
5. Solar energy - thermal applications	Solar solutions for indoor space and water heating (except for solar cook stoves 32174).
6. Wind energy	Wind energy for water lifting and electric power generation.
7. Marine energy	Including ocean thermal energy conversion, tidal and wave power.
8. Geothermal energy	Use of geothermal energy for generating electric power or directly as heat for agriculture, etc.
9. Biofuel-fired power plants	Use of solids and liquids produced from biomass for direct power generation. Also includes biogases from anaerobic fermentation (e.g. landfill gas, sewage sludge gas, fermentation of energy crops and manure) and thermal processes (also known as syngas); waste-fired power plants making use of biodegradable municipal waste (household waste and waste from companies and public services that resembles household waste, collected at installations specifically designed for their disposal with recovery of combustible liquids, gases or heat). See code 23360 for non-renewable waste-fired power plants.
Energy generation, non-renewable sources	
1. Energy generation, non-renewable sources, unspecified	Thermal power plants including when energy source cannot be determined; combined gas-coal power plants.
2. Coal-fired electric power plants	Thermal electric power plants that use coal as the energy source.

3. Oil-fired electric power plants	Thermal electric power plants that use fuel oil or diesel fuel as the energy source.
4. Natural gas-fired electric power plants	Electric power plants that are fuelled by natural gas; related feed-in infrastructure (LNG terminals, gasifiers, pipelines to feed the plant).
5. Fossil fuel electric power plants with carbon capture and storage (CCS)	Fossil fuel electric power plants employing technologies to capture carbon dioxide emissions. CCS not related to power plants should be included under 41020. CCS activities are not reportable as ODA.
6. Non-renewable waste-fired electric power plants	Electric power plants that use non-biodegradable industrial and municipal waste as the energy source.
Hybrid energy plants	
Hybrid energy electric power plants	Electric power plants that make use of both non-renewable and renewable energy sources.
Energy distribution	
1. Heat plants	Power plants which are designed to produce heat only.
2. District heating and cooling	Distribution of heat generated in a centralised location, or delivery of chilled water, for residential and commercial heating or cooling purposes.
3. Electric power transmission and distribution (centralised grids)	Grid distribution from power source to end user; transmission lines. Also includes storage of energy to generate power (e.g. pumped hydro, batteries) and the extension of grid access, often to rural areas.
4. Electric power transmission and distribution (isolated mini-grids)	Includes village grids and other electricity distribution technologies to end users that are not connected to the main national grid. Also includes related electricity storage. This code refers to the network infrastructure only regardless of the power generation technologies.
5. Retail gas distribution	Includes urban infrastructure for the delivery of urban gas and LPG cylinder production, distribution and refill. Excludes gas distribution for purposes of electricity generation (23340) and pipelines (32262).
6. Retail distribution of liquid or solid fossil fuels	
7. Electric mobility infrastructures	Includes electricity or hydrogen recharging stations for private and public transport systems and related infrastructure (except for rail transport 21030).

Source: *Development finance standards, DAC and CRS code lists* (OECD, 2019b)

Appendix 2. Prepared assessment cards for indicators and criteria

Ownership and Policy alignment (O) Indicator coverage:		Traffic light If the score X is <table border="1" style="margin-left: auto; margin-right: auto;"> <tr><td style="background-color: green;">x ≥ 67</td></tr> <tr><td style="background-color: yellow;">33 < x < 67</td></tr> <tr><td style="background-color: red;">33 ≤ x</td></tr> </table>	x ≥ 67	33 < x < 67	33 ≤ x
x ≥ 67					
33 < x < 67					
33 ≤ x					
O1. Mongolia set country specific RE policy framework and investment needs	O1.1. Existing RE legal framework	X = sum, divide by four			
	O1.2 Existing RE policy framework				
O2. RE interventions are led by country RE policy framework	O2.1. RE interventions led or initiated by country				
	O2.2. RE interventions are aligned with their objectives and rationalities				
O3. Development finance strengthens energy governing institutions	O3.1 Commitment for energy policy and administration				
	O3.2. Commitment for energy education & training				
	O3.3. Commitment for energy research				
	O3.4. Commitment for energy conservation & efficiency				
	O3.5. Commitment for RE related policy				

O1. Mongolia set country-specific RE policy framework and investment needs


Criteria and method to assess	Yes-100, No-0	Traffic light If the score X is <table border="1" style="margin-left: auto; margin-right: auto;"> <tr><td style="background-color: green;">x ≥ 67</td><td>Satisfactory</td></tr> <tr><td style="background-color: yellow;">33 < x < 67</td><td>Some extent not satisfactory</td></tr> <tr><td style="background-color: red;">33 ≤ x</td><td>Not satisfactory</td></tr> </table>	x ≥ 67	Satisfactory	33 < x < 67	Some extent not satisfactory	33 ≤ x	Not satisfactory
x ≥ 67	Satisfactory							
33 < x < 67	Some extent not satisfactory							
33 ≤ x	Not satisfactory							
Existing RE legal framework (ii) allow private sector ownership of RE generation		(X = sum, divide by 2)						
Existing RE policy framework (iv) Set goal (s), priorities, targets								
(v) RE target integrated with international commitments (e.g. NDC, SDGs)								
(vi) Set investment needs/plan								


O2. RE interventions are led within the RE policy framework

Criteria and scoring		<table border="1" style="margin-left: auto; margin-right: auto;"> <tr><td style="background-color: green;">x ≥ 67</td></tr> <tr><td style="background-color: yellow;">33 < x < 67</td></tr> <tr><td style="background-color: red;">33 ≤ x</td></tr> </table>	x ≥ 67	33 < x < 67	33 ≤ x									
x ≥ 67														
33 < x < 67														
33 ≤ x														
<p>(i) RE interventions led or initiated by country (e.g. government agencies, local private companies, or local CSOs)</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <tr><td style="background-color: red;">0</td><td>no lead by country</td></tr> <tr><td style="background-color: yellow;">50</td><td>not specific, but in co-operation with country</td></tr> <tr><td style="background-color: green;">100</td><td>lead by country</td></tr> </table> <p>(ii) RE interventions are aligned with their objective and rationalities</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <tr><td style="background-color: red;">0</td><td>doesn't match any of RE policy framework</td></tr> <tr><td style="background-color: yellow;">50</td><td>matches general energy policy framework, not specific RE goals</td></tr> <tr><td style="background-color: green;">100</td><td>aligned with RE policy framework and specific goals (e.g. increase RE production, reduction of CO2 emission)</td></tr> </table>	0	no lead by country	50	not specific, but in co-operation with country	100	lead by country	0	doesn't match any of RE policy framework	50	matches general energy policy framework, not specific RE goals	100	aligned with RE policy framework and specific goals (e.g. increase RE production, reduction of CO2 emission)		Traffic light If the score X is
0	no lead by country													
50	not specific, but in co-operation with country													
100	lead by country													
0	doesn't match any of RE policy framework													
50	matches general energy policy framework, not specific RE goals													
100	aligned with RE policy framework and specific goals (e.g. increase RE production, reduction of CO2 emission)													
Development partner(s) and RE project funded by development and climate finance	X = sum, divide by 10 (i) (ii)	X = sum, divide two-column)												


1	China: Erdeneburen Hydropower plant			
2	EBRD, Japan: Tsetsii Wind Farm Project			
3	CIF, ADB, World Bank: Upscaling Renewable Energy Sector Project			
4	EU, EBRD, Denmark: Sainshand Wind Park			
5	GCF: Renewable Energy Program #1 – Solar			
6	Korea: Eco-friendly Town Development Project			
7	Czech Republic: Improvement of the reliable electric supply in Mongolia			
8	UNDP, GEF: NAMA in Construction Sector			
9	World Bank: Ulaanbaatar Clean Air Project			
10	ADB, China, Korea: Northeast Asia Power System Interconnection (NAPSI)			

03. Development finance strengthens energy governing institutions

Criteria and scoring	Scoring Yes-100, No-0	Traffic light If the score X is 
Development finance commitments for (since 2014) (v) general energy policy and administration has increased (vi) energy education and training has increased (vii) energy research has increased (viii) energy conservation and efficiency has increased (ix) RE related policy has increased		$X = \text{sum, divide by five}$

Principle 2. Focus on results (R) Indicator coverage:		Traffic light If the score X is 
R1. Country set comprehensive RE target setting, achievement of results are in place	RE capacity	$X = \text{sum, divide by two}$
	RE target for electricity	
	RE target for district heating and cooling	
	RE target for transport	
R2. Results frameworks of RE interventions are aligned	RE interventions set logical or results framework in line with country RE target setting	
	Results indicators and framework are designed in line with SDG 7.2.1 and sustainability pillars	

R1. Policy set comprehensive RE target setting; achievement of results is in place

Criteria and scoring					Traffic light If the score X is 
	RE capacity	RE target for electricity	RE target for district heating & cooling	RE target for transport	
The policy set RE targets and result indicators in measurable and timely manner					

Yes 100	Specific RE target set with baseline, year and result, M&E					X=sum, divide by two
No 0	No specific RE target, no M&E, no baseline					
Achievements of policy targets and results are in place						
Yes 100	No target is set in the policy Successful achievement as planned (or closer to 100%, as of 2019)					
No 0	Under achievement as planned (as of 2019)					

R2. Results frameworks of RE Interventions are aligned

<p>Criteria and scoring</p> <p>(i) RE interventions set logical or results framework in line with country RE target setting</p> <table border="1"> <tr> <td>Scoring X</td> <td>0</td> <td>No publicly available information or project documents about measurable result framework or indicators</td> </tr> <tr> <td></td> <td>0</td> <td>No measurable result indicators, neither in line with country RE framework</td> </tr> <tr> <td></td> <td>50</td> <td>Measurable results indicator, but full results framework and M&E are not publicly available</td> </tr> <tr> <td></td> <td>100</td> <td>Measurable results framework with M&E</td> </tr> </table> <p>(ii) Results indicators and framework are designed in line with SDG 7.2.1 and sustainability pillars</p> <table border="1"> <tr> <td>Scoring X</td> <td>0</td> <td>No publicly available information or project documents about measurable result framework or indicators</td> </tr> <tr> <td></td> <td>0</td> <td>Not aligned</td> </tr> <tr> <td></td> <td>50</td> <td>Indirectly aligned (e.g. energy efficiency)</td> </tr> <tr> <td></td> <td>100</td> <td>Fully aligned</td> </tr> </table>		Scoring X	0	No publicly available information or project documents about measurable result framework or indicators		0	No measurable result indicators, neither in line with country RE framework		50	Measurable results indicator, but full results framework and M&E are not publicly available		100	Measurable results framework with M&E	Scoring X	0	No publicly available information or project documents about measurable result framework or indicators		0	Not aligned		50	Indirectly aligned (e.g. energy efficiency)		100	Fully aligned	<p>Traffic light</p> <p>If the score X is</p> <table border="1"> <tr> <td>$x \geq 67$</td> </tr> <tr> <td>$33 < x < 67$</td> </tr> <tr> <td>$33 \leq x$</td> </tr> </table>		$x \geq 67$	$33 < x < 67$	$33 \leq x$
Scoring X	0	No publicly available information or project documents about measurable result framework or indicators																												
	0	No measurable result indicators, neither in line with country RE framework																												
	50	Measurable results indicator, but full results framework and M&E are not publicly available																												
	100	Measurable results framework with M&E																												
Scoring X	0	No publicly available information or project documents about measurable result framework or indicators																												
	0	Not aligned																												
	50	Indirectly aligned (e.g. energy efficiency)																												
	100	Fully aligned																												
$x \geq 67$																														
$33 < x < 67$																														
$33 \leq x$																														
Development partners and RE project		X=sum, divide by 10																												
		(i)	(ii)																											
1	China: Erdeneburen Hydropower plant																													
2	EBRD, Japan: Tsetsii Wind Farm Project																													
3	CIF, ADB, World Bank: Upscaling Renewable Energy Sector Project																													
4	EU, EBRD, Denmark: Sainshand Wind Park																													
5	GCF: Renewable Energy Program #1 – Solar																													
6	Korea: Eco-friendly Town Development Project																													
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9	World Bank: Ulaanbaatar Clean Air Project																													
10	ADB, China, Korea: Northeast Asia Power System Interconnection (NAPSI)																													
		X=sum, divide by 2																												

Principle 3. Inclusive partnerships (P)		<p>Traffic light</p> <p>If the score X is</p> <table border="1"> <tr> <td>$x \geq 67$</td> </tr> <tr> <td>$33 < x < 67$</td> </tr> <tr> <td>$33 \leq x$</td> </tr> </table>		$x \geq 67$	$33 < x < 67$	$33 \leq x$
$x \geq 67$						
$33 < x < 67$						
$33 \leq x$						
PPP projects in RE infrastructure have increased since 2014						

P1. Enhanced Public-Private Partnerships (PPPs)	Procuring infrastructure PPPs (WB assessment of 2018)	X=sum, divide by two
P2. Inclusive CSOs engagement	Consultation of CSOs in the design, implementation and monitoring of RE interventions and policies Enabling Environment for CSOs in the context of RE	

P1. Enhanced Public-Private Partnerships (PPPs)

Criteria and scoring														
(iii) PPP Projects in RE infrastructure have increased since 2014		<div style="display: flex; justify-content: space-between;"> <div style="width: 60%;"> <p><i>Scoring</i></p> <table border="1" style="width: 100%;"> <tr> <td style="background-color: red; color: white;">0</td> <td style="background-color: red; color: white;">Not satisfactory</td> <td>Decreased or no increase</td> </tr> <tr> <td style="background-color: yellow;">50</td> <td style="background-color: yellow;">Some extent not satisfactory</td> <td>Increased number of PPPs projects</td> </tr> <tr> <td style="background-color: green;">100</td> <td style="background-color: green;">Satisfactory</td> <td>Constant increased number of PPPs projects</td> </tr> </table> </div> <div style="width: 35%; text-align: center;"> <table border="1" style="margin: auto;"> <tr><td style="background-color: green;">x ≥ 67</td></tr> <tr><td style="background-color: yellow;">33 < x < 67</td></tr> <tr><td style="background-color: red;">33 ≤ x</td></tr> </table> </div> </div> <p>X=sum, divide by two</p>	0	Not satisfactory	Decreased or no increase	50	Some extent not satisfactory	Increased number of PPPs projects	100	Satisfactory	Constant increased number of PPPs projects	x ≥ 67	33 < x < 67	33 ≤ x
0	Not satisfactory		Decreased or no increase											
50	Some extent not satisfactory	Increased number of PPPs projects												
100	Satisfactory	Constant increased number of PPPs projects												
x ≥ 67														
33 < x < 67														
33 ≤ x														
(iv) Procuring Infrastructure PPPs (WB's assessment of 2018)														
<p><i>Scoring</i></p> <table border="1" style="width: 100%; text-align: center;"> <tr><td style="background-color: green;">x ≥ 67</td></tr> <tr><td style="background-color: yellow;">33 < x < 67</td></tr> <tr><td style="background-color: red;">33 ≤ x</td></tr> </table>		x ≥ 67	33 < x < 67	33 ≤ x	X=sum, divide by 4									
x ≥ 67														
33 < x < 67														
33 ≤ x														
Preparation of PPPs	Procurement of PPPs	PPP Contract Management	Unsolicited Proposals											

P2. Inclusive CSOs engagement

Criteria and scoring														
(iii) Consultation of CSOs in the design, implementation and monitoring of RE interventions and policies		<div style="display: flex; justify-content: space-between;"> <div style="width: 60%;"> <p><i>Scoring:</i></p> <table border="1" style="width: 100%;"> <tr> <td style="background-color: red; color: white;">0</td> <td style="background-color: red; color: white;">Not satisfactory</td> <td>No consultation</td> </tr> <tr> <td style="background-color: yellow;">50</td> <td style="background-color: yellow;">Some extent not satisfactory</td> <td>Occasional</td> </tr> <tr> <td style="background-color: green;">100</td> <td style="background-color: green;">Satisfactory</td> <td>Regular and institutionised</td> </tr> </table> </div> <div style="width: 35%; text-align: center;"> <table border="1" style="margin: auto;"> <tr><td style="background-color: green;">x ≥ 67</td></tr> <tr><td style="background-color: yellow;">33 < x < 67</td></tr> <tr><td style="background-color: red;">33 ≤ x</td></tr> </table> </div> </div> <p>X=sum, divide by 4</p>	0	Not satisfactory	No consultation	50	Some extent not satisfactory	Occasional	100	Satisfactory	Regular and institutionised	x ≥ 67	33 < x < 67	33 ≤ x
0	Not satisfactory		No consultation											
50	Some extent not satisfactory	Occasional												
100	Satisfactory	Regular and institutionised												
x ≥ 67														
33 < x < 67														
33 ≤ x														
<table border="1" style="width: 100%;"> <tr><td>Government agencies consult CSOs</td><td></td></tr> <tr><td>Government agencies consult CSOs in SDG7</td><td></td></tr> <tr><td>Private entities consult CSOs</td><td></td></tr> <tr><td>Development partners consult CSOs</td><td></td></tr> </table>		Government agencies consult CSOs		Government agencies consult CSOs in SDG7		Private entities consult CSOs		Development partners consult CSOs		X=sum, divide by 2				
Government agencies consult CSOs														
Government agencies consult CSOs in SDG7														
Private entities consult CSOs														
Development partners consult CSOs														
(iv) Enabling Environment for CSOs in the context of RE														
<table border="1" style="width: 100%;"> <tr> <td style="background-color: red; color: white;">0</td> <td style="background-color: red; color: white;">Not satisfactory</td> <td>No financial and information support, no other CSOs coordination</td> </tr> <tr> <td style="background-color: yellow;">50</td> <td style="background-color: yellow;">Some extent not satisfactory</td> <td>Lack of information, financial support and other CSOs coordination</td> </tr> <tr> <td style="background-color: green;">100</td> <td style="background-color: green;">Satisfactory</td> <td>Regular financial and information support, other CSOs coordination are in place</td> </tr> </table>		0	Not satisfactory	No financial and information support, no other CSOs coordination	50	Some extent not satisfactory	Lack of information, financial support and other CSOs coordination	100	Satisfactory	Regular financial and information support, other CSOs coordination are in place				
0	Not satisfactory	No financial and information support, no other CSOs coordination												
50	Some extent not satisfactory	Lack of information, financial support and other CSOs coordination												
100	Satisfactory	Regular financial and information support, other CSOs coordination are in place												

Appendix 3: Interviewees, protocol, questions and base email

1. List of interviewees and interview protocol

#	Category	Organisation	Name, Affiliation	Date	Duration	In-text Citation
1	Government official	Energy Regulatory Commission (ERC), Ministry of Energy	Jambaa Lkhagva, Director for Market research and International Division	April 21, 2020	1h 10min	I1 ERC, MoE
2	Private sector/ Accredited entity	XacBank LLC, Eco Banking Department Green Climate Fund's accredited entity (XB)	Greg Zegas, Former Senior Project Development Officer	April 14, 2020	56 min	I2 Climate finance officer, XB
3	CSOs/NGO	Mongolian Renewables Industries Association (MRIA)	Bolortuya Buyanmunkh, Former Program Officer	May 4, 2020	36min	I3 MRIA

2. Template email for sending interview topic, questions, and interview time.

<p>Dear</p> <p>It was nice to connect with you on LinkedIn. As I mentioned, I am sending you my detailed research topic.</p> <p>“The purpose of my research project ...”</p> <p>Therefore, I would like to discuss with you about ... <i>X projects funded by X donor</i>. More specifically, topic areas include <i>or attach as document with detailed questions</i>.</p> <p>Below you will find the zoom link at agreed time. See you soon. Feel free to ask any questions and give feedback.</p> <p>Time: Date 11:00 AM Eastern Time (US and Canada) <i>Link</i> of Zoom Meeting</p> <p>I appreciate your time and support. Thank you. Best regards,</p>

3. Template email for asking information/quote consent

<p>Dear</p> <p>Happy warm days! Once again, thank you so much for taking time to participate in my research.</p> <p>I found very helpful inputs from your interview, so I selected several direct and in-text quotes. To ensure the consent of quotes, I am sending the texts taken from the interview transcript. Since I am not an expert, there may be some wrong understanding or translation error. Also, please inform me if there are any inappropriate quotes (e.g. ethical considerations), I will remove accordingly.</p> <ul style="list-style-type: none"> • If possible, could you send me the confirmation and correction of the quotes before <i>_date?</i>

- Could you also reconfirm the citation of your name (1) or (2) do you prefer anonymous? Also, if possible, could you provide me your preferred affiliation?

 Thank you so much.
 Best regards,

4. Interview questions and topic

	Interviewee representatives	Topic and questions covered
1	Ministry of Energy, Energy Regulatory Commission (ERC)	<ul style="list-style-type: none"> • Support to private sector in the development of RE • RE law amendments • What is current role of MoE, ERC in cooperation with development partners? • Co-operation with CSOs • Monitoring results, RE projects • Periodic reporting reporting mechanism for RE • Is generation and transmission plan integrated? • From the policy perspective, how does improve the share of RE in total electricity generation?
2	XacBank, Green Climate Fund's accredited entity	<ul style="list-style-type: none"> • Where are the objective/s of the energy/climate mitigation project(s) drawn from? • Does the project(s) have a results framework or logical framework? • Have results indicator reported using sources of information directly provided by existing monitoring systems? Is there a final evaluation planned for the project (s)? if yes to what extend the Ministry of Energy be involved in the evaluation? • To what extent do development partners consult energy and sustainability CSOs in the design, implementation and monitoring of their development finance policies and programmes? • To what extent is the promotion of an enabling environment for energy CSOs (e.g. political, financial, legal and policy aspects) an agenda item in development partners' policy dialogue with the Ministry of Energy? • To what extent is development partner financial support maximising sustainable engagement of energy CSOs in all aspects of clean energy development? • What kind of management information systems that the MoE use to collection information on development finance? • Is management information systems publically available? Website link • To what extent is there a quality policy framework in place to guide energy development finance and partnerships? • To what extend does development partner include gender equality for the energy intervention? Do women's organizations and relevant government body track and monitor project's funding allocations for gender equality and women's empowerment?
3	Mongolian Renewables Industries Association (MRIA)	<ul style="list-style-type: none"> • Could you explain the objective, main operation of MRIA? • Current level of enabling environment for energy CSOs (e.g. political, financial, legal and policy aspects) • Dialogue with Ministry of Energy • International development partners' consultation with MRIA in the RE projects • Transparency and mutual accountability

Appendix 4: Snapchat of Energy Aid Atlas

Figure 14. All donors to Mongolia for energy during 2010-2014 and sub-sectors

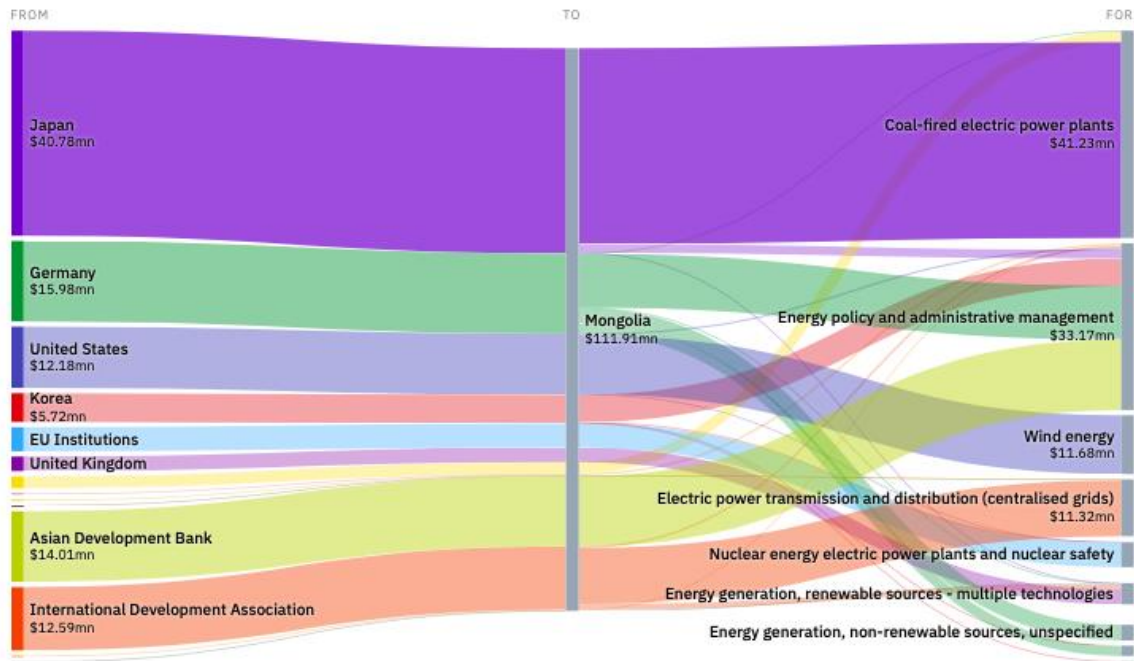
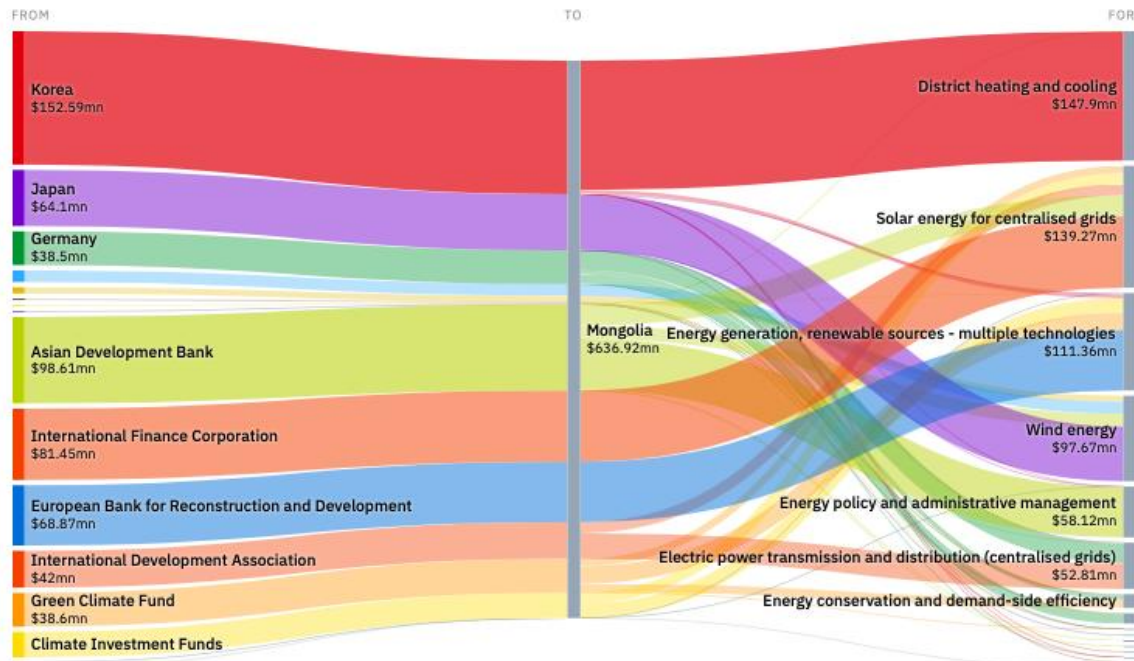


Figure 15. All donors to Mongolia for energy during 2015-2018 and sub-sectors



Source: Adopted from Aid Atlas (SEI, 2019)

Appendix 5: Collected results indicators of RE projects

	Donors & RE project	Measureable result indicator (s)	Visual Results framework	Monitoring framework
1	<i>China</i> Erdeneburen Hydropower plant 90 MW	Reduce emissions of approximately 756,600 tons of CO2 per year (approximately 1,3 tons) 800-1000 temporary jobs during the construction 70-100 permanent jobs after the commisioning Project lifespan 2019-2024 ²⁴	NA	NA Responsible people are defined – Project steering committee and Project implementation unit
2	<i>EBRD, Japan</i> Tsetsii Wind Farm Project 50M	230,000 tons of GHG will be displaced of the results of the project; 180,000 tons of coal and 1,2 million tons of water saved through project implementation	NA	EBRD performance requirements Environmental and Social Monitoring
3	<i>CIF, ADB, World Bank, Germany</i> Upscaling Renewable Energy Sector Project 10 WM Wind 6MW Wind 5MW PV 10MW PV Battery Hybrid (Wind +PV)	(core) Tonnes of carbon diaxodie equivalent (t CO2 eq) to be reduced or avoided - Annual 88,016 tons - Lifetime 2,200,402 tons (for 25 years of the project life) (core) Total number of direct and indirect beneficiaries, diagggregated by gender (reduced vulnerability or increased resilience) - 304,000 population of which 140,000 populations are female Renewable energy capacity (MW) 41.5 MW Number of households with access to low-emission energy – 77,179 households	Yes Output-based results framework	Yes, Transformative impacts: Ministry of Energy Program outcome: SREP and Projects M&E
4	<i>EU, EBRD, Denmark</i> Sainshand Wind Park 55MW Yearly output 210,000 MWh	An amount of USD 117.5 mln foreign direct investment /FDI/ to Mongolia Saving 2 mln m3 fresh water Decreasing coal consumption in amount of 50 thousand tons Yearly produces 210, 000 MWt/h green energy to central region networking, which supplies more than 100 thousand households Prevents release of 200,000 tons of CO2 emission into the atmosphere Creates 30-40 workplaces since wind park starts its energy production Construction commenced in August 2017 and completion is estimated to be January 2019	NA	In accordance with EBRD’s performance requirements, EIB’s Standards on Assessment and Management of Environmental and Social Standards and Risks, substantive environmental standards of the EU.
5	<i>GCF XacBank</i> Renewable Energy Program #1 – Solar 10MW	Total greenhouse gas emission reduction for project lifetime of 306,750 tons (12,270 tons annually); Total water savings for project lifetime of 4,276,250,000 litres (171,050,000 annually); Total coal savings for project lifetime of 384,434 tons (15,377.40 annually); Total number of people to be employed: 200 – 250 during construction phase; 10 – 15 during operation phase;	Yes	XacBank’s monitoring and post evaluation on RE generation and reduced CO2 emissions, twice a year GCF’s Environment and Social Safeguards: Environment and Social management system (ESMS)

²⁴ Media source explains that end of implemetation year is 2023, the project will create 60-80 permanent jobs.

		Supply a total of 0.26% of the country's total electricity generation; Supply electricity to about 20,000 households		
6	<i>Korea</i> Eco-friendly Town Development Project	Qualitative – ongoing/under development **KDS will prepare a final performance report based on the results of the workshop, the measurement of the awareness improvement about RE, and the overall performance of the project which will be announced to Mongolian stakeholders and residents at the completion ceremony in October.		
7	<i>Czech Republic</i> Improvement of the reliable electric supply in Mongolia	Transform the nursery into regional training center for approximately 150 trainers and trainees	NA	NA
8	<i>UNDP, GEF</i> NAMA in Construction Sector	10,709 tCO ₂ e cumulative emissions reduced by EOP 18,722 MWh cumulative heat and electrical energy savings by EOP 100% of new buildings fully beyond non-compliance with BCNS by EOP 50 people gainfully employed on EE in the construction sector Energy consumption and GHG emission	Yes	Yes MRV
9	<i>World Bank</i> Ulaanbaatar Clean Air Project	% of project beneficiaries reporting an improvement in quality of heating Inter-agency and donor coordination framework for air pollution abatement measures developed and functioning (cumulative no. of year) Additional # of households provided with access to clean heating appliances Approval by relevant counterparts of principle recommendations and action plans developed by the Project for selected medium-term abatement measures (no. of action plans approved) Coverage of targeted households with eligible services	Yes	Yes Implementation Ratings Satisfactory
10	<i>ADB, Climate Change Fund, China, Korea</i> TA: Northeast Asia Power System Interconnection (NAPSI)	a. NAPSI steering committee, a regional knowledge and investment committee annual platform, is fully operational 2020 (2015 baseline: 0) b. The proposed Mongolia's strategy and its action plan is endorsed and adopted by the NAPSI steering committee by 2020 (2015 baseline: 0)	Yes	Design and Monitoring Framework. Document Independent Evaluation (not available yet)

Appendix 6: Result of effectiveness principles by tables

1. Overall assessment of ownership and policy alignment

Scoring			Traffic light
Not satisfactory – 0			If the score X is
Some extent not satisfactory - 50			
Satisfactory - 100			
O1. Mongolia set country specific RE policy framework and investment needs <i>Satisfactory</i>	O1.1. Existing RE legal framework	Satisfactory	$x \geq 67$
	O1.2 Existing RE policy framework	Some extent not satisfactory	$33 < x < 67$ $33 \leq x$
O2. RE interventions are led by country RE policy framework <i>Satisfactory</i>	O2.1. RE interventions led or initiated by country	Satisfactory	X=sum, divide by four Some extent not satisfactory
	O2.2. RE interventions are aligned with their objectives and rationalities	Satisfactory	
O3. Development finance strengthens institutions <i>Some extent not satisfactory</i>	O3.1 Commitment for energy policy and administration	Satisfactory	
	O3.2. Commitment for energy education & training	Not satisfactory	
	O3.3. Commitment for energy research	Not satisfactory	
	O3.4. Commitment for energy conservation & efficiency	Satisfactory	

2. Overall assessment of focus on results

Criteria assessment			Traffic light
R1. Country set comprehensive RE target setting, achievement of results are in place <i>Some extent not satisfactory</i>			If the score X is
R2. Results frameworks of RE interventions are aligned <i>Some extent not satisfactory</i>			
R1. Country set comprehensive RE target setting, achievement of results are in place <i>Some extent not satisfactory</i>	RE capacity		$x \geq 67$
	RE target for electricity		$33 < x < 67$
	RE target for district heating and cooling		$33 \leq x$
	RE target for transport		
R2. Results frameworks of RE interventions are aligned <i>Some extent not satisfactory</i>	R2.1. RE interventions set logical or results framework in line with country RE target setting		Some extent not satisfactory
	R2.1. Results indicators and framework are designed in line with SDG 7.2.1 and sustainability pillars		

3. Overall assessment of inclusive partnerships

Principle 3. Inclusive partnerships (P)			Traffic light
Criteria and scoring			If the score X is
0 Not satisfactory			$x \geq 67$
50 Some extent not satisfactory			$33 < x < 67$
100 Satisfactory			$33 \leq x$
P1. Enhanced Public-Private Partnerships (PPPs) <i>Some extent not satisfactory</i>	PPP projects in RE infrastructure have increased since 2014		X=sum, divide by two <i>Some extent not satisfactory</i>
	Procuring infrastructure PPPs (World Bank's assessment of 2018)		
P2. Inclusive CSOs engagement <i>Some extent not satisfactory</i>	Consultation of CSOs in the design, implementation and monitoring of RE interventions and policies		<i>Some extent not satisfactory</i>
	Enabling Environment for CSOs in the context of RE		

4. Overall assessment of transparency and accountability

Indicator, criteria assessment			Traffic light
T1. Development finance for RE has been disbursed as commitment			Not satisfactory
T2. Bilateral development partners enable RE energy procurement without geographical constraints (untied)			Satisfactory
T3. Enhanced transparency, accountability, budget and gender equality			Not satisfactory
(i) Transparency, accountability and corruption in the public sector rating			
(i) Quality of budgetary and financial management rating			
(ii) Gender equality rating (+ Rio Marker for gender objective)			