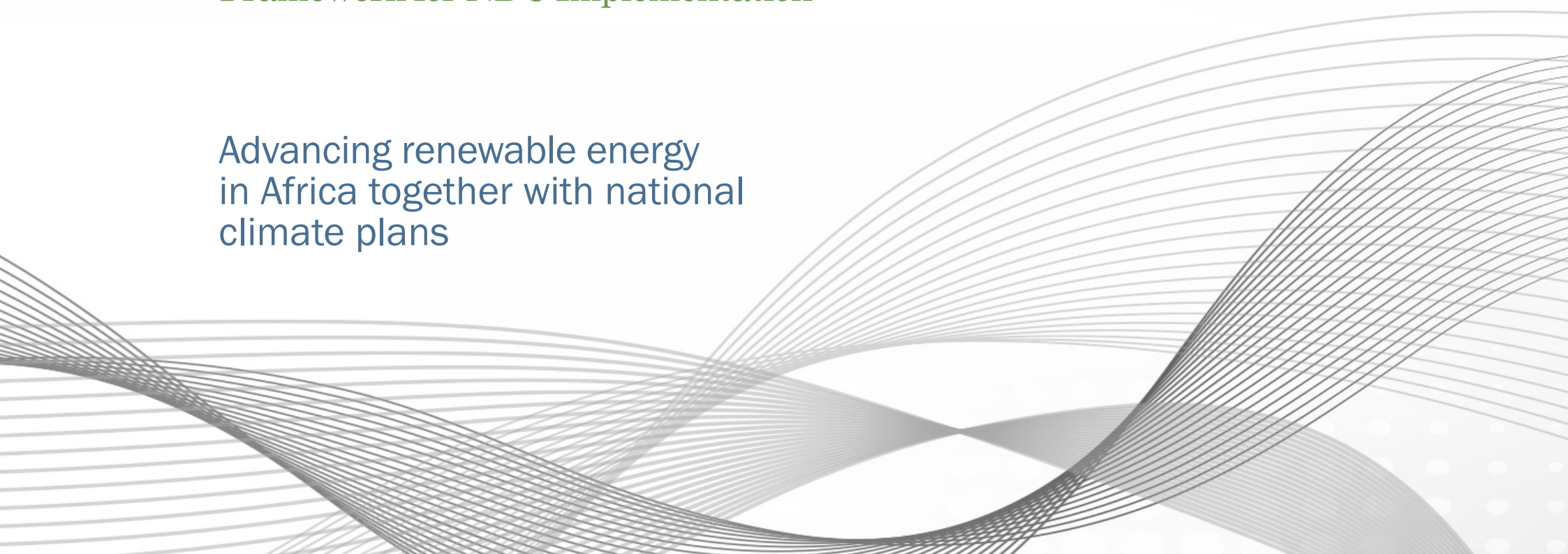


The
UMEMIE
Framework for NDC Implementation

Advancing renewable energy
in Africa together with national
climate plans



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About IRENA

The International Renewable Energy Agency (IRENA) is an intergovernmental organisation that supports countries in their transition to a sustainable energy future, and serves as the principal platform for international co-operation, a centre of excellence, and a repository of policy, technology, resource and financial knowledge on renewable energy. IRENA promotes the widespread adoption and sustainable use of all forms of renewable energy, including bioenergy, geothermal, hydropower, ocean, solar and wind energy, in the pursuit of sustainable development, energy access, energy security and low-carbon economic growth and prosperity. www.irena.org

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Introduction

In December 2015, countries around the world adopted the Paris Agreement on Climate Change. The historic climate agreement, reached at COP21*, sets the objective of keeping the rise of global temperature well below two degrees Celsius (2°C). It establishes a framework for climate action from both developed and developing countries. Commitments by countries on mitigating climate change and adapting to its adverse impacts will thereby enter international law.

Renewable energy will play a key role in such efforts. Cheap and accessible energy is critical to increase energy access and drive economic development globally. However, the most readily accessible and established energy production methods are carbon-intensive, emitting greenhouse gases and contributing to climate change. Renewable energy sources provide a way of increasing the supply of energy in a less carbon-intensive manner.

In the run-up to the Paris negotiations, countries were asked to submit plans to reduce emissions; these are known as Intended Nationally Determined Contributions (INDCs). As a country ratifies the Paris Agreement, it has to submit a formalised plan. Those plans, in turn, become binding as Nationally Determined Contributions (NDCs). Given the benefits of renewable energy to economic growth and energy production, increasing numbers of countries have included deployment of renewable energy as a way of reducing emissions and implementing their NDCs.

The framework outlined in this guide is aimed at countries in Africa, in particular. In a post-Paris context, this guide goes step-by-step through the process by which policy makers can meet their NDC targets by an increased share of renewable energy in their overall energy mix.

The framework is called “UMEME”, echoing the Swahili word for lightning or electricity. This also stands for *Understand, Measure, Evolve, Modify, Evaluate* – the five-stage process that African policy-makers are invited to follow to implement NDC targets. Through each stage, the UMEME framework provides governments with a structured approach that can support their efforts to co-ordinate NDC implementation across different parts of the bureaucracy, including ministries, agencies and national and subnational governments.

In addition to outlining a process, the framework also aims to empower African policy makers to carry out NDC implementation by linking to key sources of financial and technical assistance sources. Tools to assist policy makers, based on resources available online, are similarly highlighted for each stage.

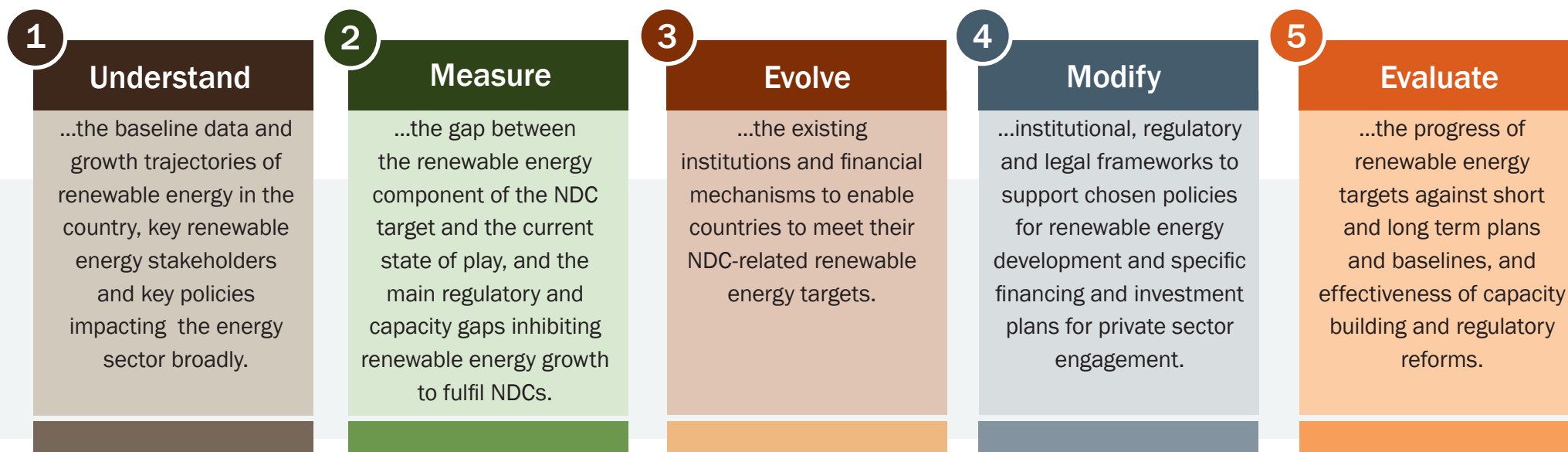
* COP21 was the twenty-first session of the Conference of the Parties to the United Nations Framework Convention on Climate Change (UNFCCC). At the conference, 195 countries, as well as the European Union, adopted the Paris Agreement, which calls for keeping the global temperature rise this century well below 2°C above pre-industrial levels and to pursue efforts to limit the temperature increase even further to 1.5°C.

Climate commitments in the African context

Climate change poses significant challenges to Africa's development, a situation that is further compounded by poverty, as well as demographic and infrastructural limitations. With over 600 million people in Africa (58% of the population) lacking access to electricity and 700 million living without access to clean cooking facilities, access to energy remains a top priority for development on the continent. In addition, high electricity costs are a persistent impediment to industrialisation and the achievement of development objectives in many countries.

Africa's vast renewable energy sources offer abundant opportunities for improving energy security and expanding energy access, at the same time as putting the continent on a clean development path that is consistent with addressing climate change. Not surprisingly, then, all 53 African countries that have submitted INDCs around the Paris meeting have included renewable energy as part of their climate plans and strategies.

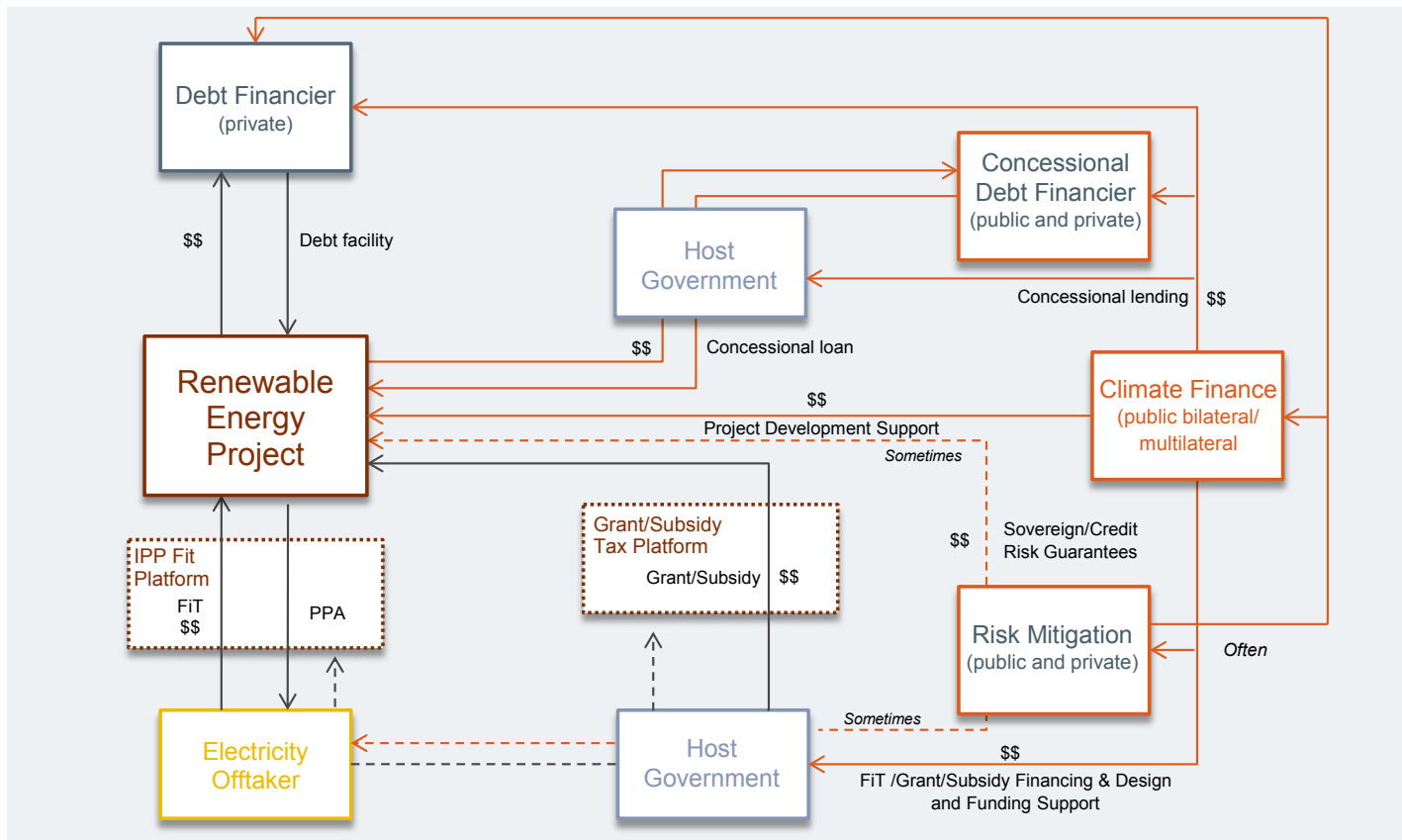
This framework is structured around a five-stage process for the implementation of NDC-related renewable energy targets. Together, the five key stages form the acronym UMEME.

Figure 1: The UMEME framework to scale up renewables and meet NDCs

Understanding climate finance

National Determined Contributions can offer considerable opportunity to advance towards the potential of renewable energy, as they can help access growing volumes of climate finance. This framework will consider each of the financing approaches outlined in the diagram below:

Figure 2: Private and public finance for renewable energy projects



Background to NDCs and renewable energy in Africa

GLOBAL FOCUS ON NDC IMPLEMENTATION

The Paris Agreement sets an unambiguous goal to hold global warming to “well below 2°C” and to pursue efforts to limit the temperature increase to 1.5°C above preindustrial levels.

The agreement centres on national climate action plans, which are rooted in NDCs – high-level policy plans setting out the approach each country will take to reduce emissions as a contribution to the global goal, and to address the adverse impacts of climate change.

In the lead-up to COP 21, Parties were called upon to submit their Intended Nationally Determined Contributions (INDCs) – interim NDCs, in effect – to help create momentum for the Paris Agreement by showcasing the extent of climate action that would be possible.

The Paris Agreement requires revised NDCs every five years, with the stipulation that these should always reflect the “highest possible ambition”. Each NDC and revision will be made publicly available through the UNFCCC.

Initial assessment of NDCs and INDCs show that countries are putting particular focus on renewable energy deployment as an important part of their strategy to achieve low carbon economies and as such reduce emissions. This is discussed further in the next section.

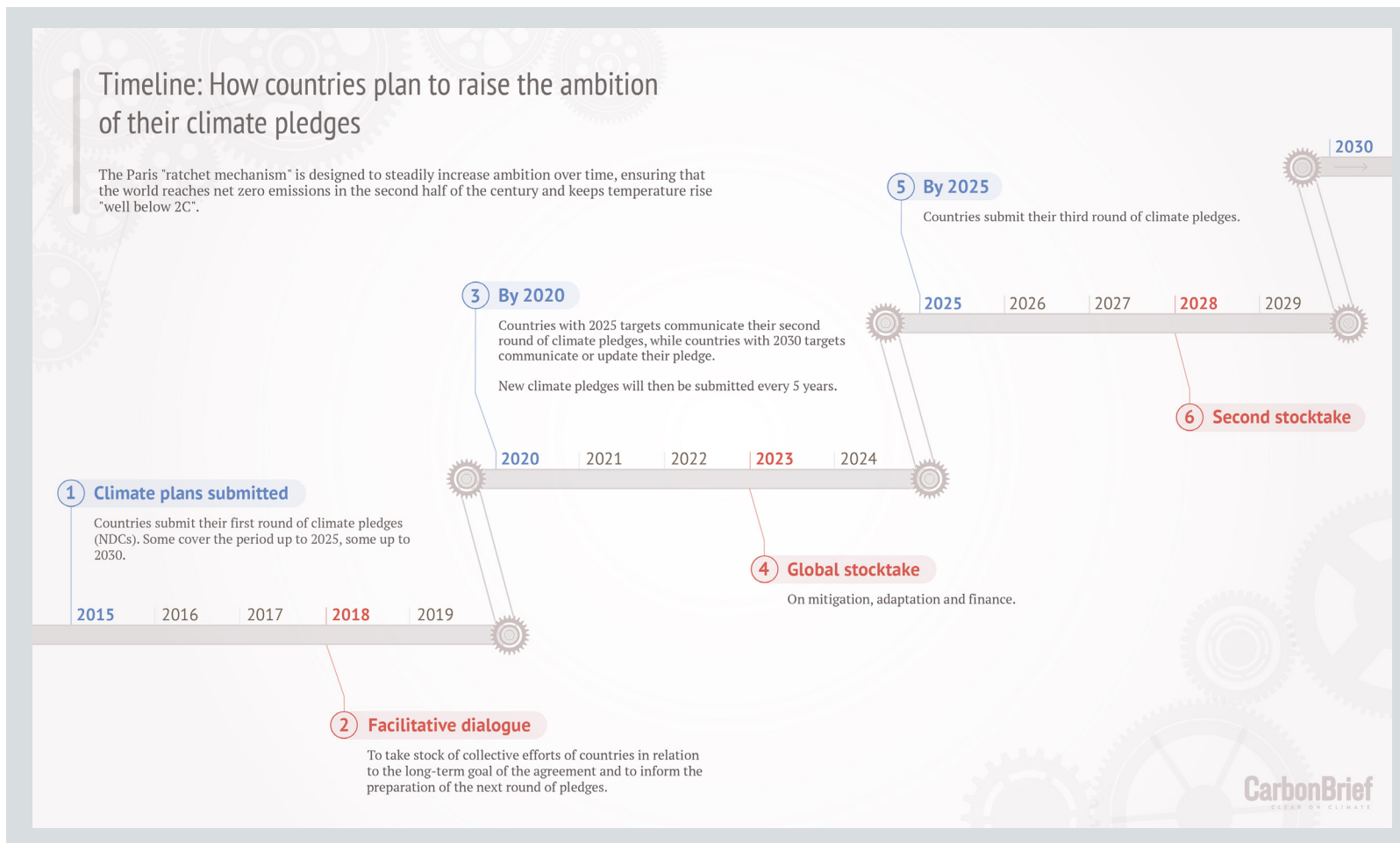
Given the process set out in the Paris Agreement, countries are likely to come under high levels of scrutiny from the UNFCCC and civil society (domestically and internationally) with respect to progress towards their targets.

Countries need to have a clear plan towards NDC implementation, and incentives to help actually achieve country targets. Such plans will need to co-ordinate different elements of the national administration and various non-government stakeholders (such as the private sector and civil society) to ensure all stakeholders are working towards NDC implementation.

ADDITIONAL RESOURCES ON THE PARIS AGREEMENT

- Baker & McKenzie
[*The Paris Agreement: Putting the first universal climate change treaty in context.*](#)
- Climate Focus
[*The Paris Agreement — Summary.*](#)
- C2ES
[*Summary of the Outcomes of the UN Climate Conference in Paris.*](#)

Figure 3: Raising ambition under the Paris Agreement



Source: CarbonBrief (www.carbonbrief.org)

ACHIEVING SUSTAINABLE DEVELOPMENT THROUGH RENEWABLE ENERGY IN AFRICA

All African-country INDCs have taken renewable energy into account as an approach to addressing climate change.

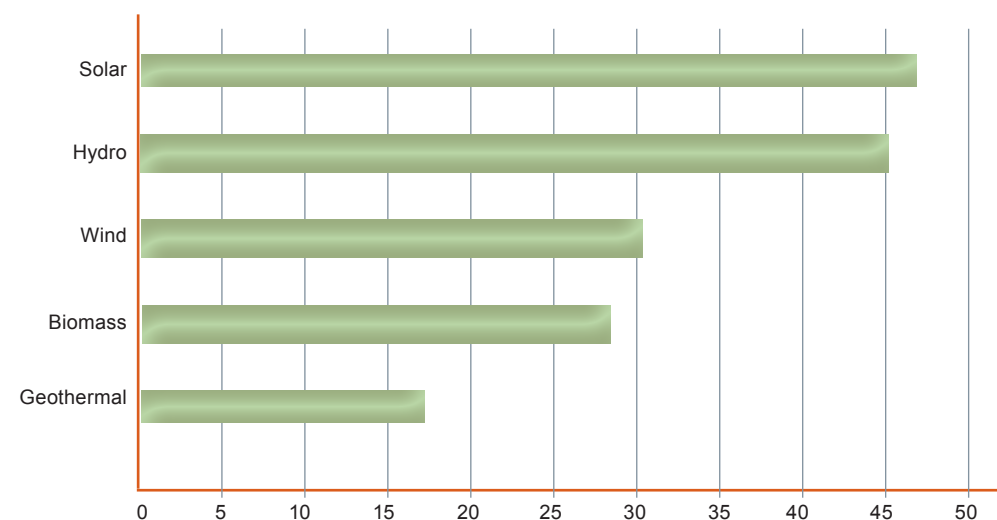
Growing the share of renewable energy allows developing countries to meet the dual objectives to increase energy access and strengthen low-carbon economic resilience.

This is important in Africa where 600 million people have no access to electricity. Also, as earlier reports (IRENA, 2015) have noted, the majority of energy supply is from greenhouse gas intensive sources: biomass (48%), crude oil (22%) and coal (14%). Natural gas supply is 14% and renewable energy supply is currently at 5%.

The INDCs reflect the growing interest of African countries to advance their renewable energy agenda. Some specific technologies and a snapshot of country pledges is given below.

It is important that countries consider the relative costs of abatement from each technology and approach. In so doing, policy makers should not just consider using renewable energies instead of traditional energy sources, but also other approaches to reducing emissions, such as increasing energy efficiencies and carbon sequestration.

Figure 4: Renewable energy components of African INDCs



Source: IRENA (2016)







<http://www.irena.org/EventDocs/RECC/24.%20INDC%20overview.pdf>

Table 1: Sample African INDCs incorporating Renewable Energy Targets

COUNTRY	RENEWABLE ENERGY TARGET
NORTH AFRICA	
Algeria	Derive 27% of electricity produced nationally from renewable energy.
Morocco	Achieve at least 50% of installed electricity production capacity from renewable energy by 2025 and 52% of installed electrical power from renewable energy by 2030.
WEST AFRICA	
Nigeria	Create 13 gigawatts (GW) worth of renewable electricity to electrify rural communities currently off-grid.
Mali	Install more than 100 megawatts (MW) of renewable energy and a 10% renewable energy share in mix by 2020 (solar, wind, hydro, biomass).
Niger	Increase renewable energy capacity to 250 MW by 2030 compared to 4 MW in 2010 of which 130 MW hydroelectricity plant of Kandadji and 20 MW of wind. Doubling renewable energy share for 30% penetration in energy mix in primary/final use.
CENTRAL AFRICA	
Cameroon	Reach 25% of energy mix from renewable by 2035, comprising: 11% micro-hydro; 7% biomass; 6% solar PV and 1% wind.
Gabon	Achieve 80% of electricity from hydro sources.
EAST AFRICA	
Ethiopia	Double renewable energy electricity supply to 67 TWh by 2030.
Eritrea	Raise share of electricity generation from renewable energy to 70% of the total electricity generation mix.
Uganda	Increase renewable energy capacity from 729 MW in 2013 to 3,200 MW by 2030. Technologies include hydro, solar, biomass and geothermal.
SOUTH AFRICA	
Namibia	Increase share of renewables in electricity production from 33% to 70%.
Swaziland	Double share of renewable energy in national mix by 2030 relative to 2010 levels.

To achieve these targets, there is still a need to attract substantial financing to renewable energy in Africa. The table below shows IRENA estimates of the cumulative investment needs between 2015 and 2030 in the entire power sector, including both renewables and non-renewables to meet increasing energy demand and at the same time raise the share of renewables to 22%.

Table 2: Expected power-sector investment needs across Africa, 2015-2030

USD BILLION				
Region	All generation	Large hydro	Other renewables	T&D
 North Africa	342	2	218	186
 West Africa	89	36	31	52
 Central Africa	32	13	17	14
 East Africa	72	36	21	49
 Southern Africa	145	18	94	74
 Total	681	106	381	375

The **African Renewable Energy Initiative** (AREI) is an African owned and African led initiative to accelerate and scale up renewable energy in the continent. It has been established under a mandate from the African Union, and is endorsed by the Committee of African Heads of State and Government on Climate Change (CAHOSCC).

AREI has two goals:

1. Help achieve sustainable development, enhanced well-being, and sound economic development by ensuring universal access to sufficient amounts of clean, appropriate and affordable energy.
2. Help African countries leapfrog to renewable energy systems that support their low-carbon development strategies while enhancing economic and energy security.

ADDITIONAL RESOURCES REGARDING RENEWABLE ENERGY IN AFRICA

- IRENA. [Africa 2030: Roadmap for a Renewable Energy Future](#).
- IRENA. [REmap Dashboard](#).
- IEA. [Africa Energy Outlook 2014](#).
- REN21. [ECOWAS Renewable Energy and Energy Efficiency Status Report](#).
- REN21. [MENA Renewables Status Report](#).
- REN21. [SADC Renewable Energy and Energy Efficiency Status Report](#).

Over two phases (2016-2020 and 2020-2030) AREI aims to respectively achieve at least 10 GW of new and additional renewable power generation capacity, and mobilise the African potential to generate at least 300 GW.

CLIMATE FINANCING FOR RENEWABLES

Climate finance for renewable energy projects can come from public and private sources. There are multiple definitions of “climate finance” (for some discussion on this see [this paper, by the Climate Policy Initiative](#)). For the purposes of this document, we define climate finance as financing directed by national, regional and international public institutions for climate change mitigation – and specifically renewable energy – projects and programs.

Through the UNFCCC process, developed countries have committed to mobilising USD 100 billion a year in climate finance by 2020, and as part of the Paris Agreement, they agreed to continue mobilising finance at this level until 2025, and create a roadmap to continue and enhance such efforts. Indeed, the World Economic Forum anticipates that by 2020, about USD 5.7 trillion will need to be invested annually in green infrastructure, much of which will be in today’s developing world, to ensure resilience to climate change. Therefore, it will be important to attract both public and private capital for climate related purposes.

A key barrier to private investment in renewable energy projects is that, compared to non-renewable energy projects, the upfront costs are higher and, given a lack of track record in many economies, they are associated with a higher risk (particularly in emerging economies). Governments, therefore, need to create public policies which incentivise investment into renewable energy and which provide favourable returns on investment for the private sector. An in-depth introduction and an analysis of case studies is given in IRENA’s publication *‘Unlocking renewable energy investment: the role of risk investigation and structural finance’*.

SUSTAINABLE ENERGY FOR ALL

The Sustainable Energy for All (SE4All) initiative was launched by UN Secretary-General Ban Ki moon as a global initiative that would mobilise action from all sectors of society in support of three objectives to achieve by 2030:

1. Providing universal access to modern energy services;
2. Doubling the global rate of improvement in energy efficiency; and
3. Doubling the share of renewable energy in the global energy mix.

The Secretary-General’s High-Level Group on SE4All has created a Global Action Agenda to guide effort undertaken in support of achieving these objectives whilst governments, the private sector and multilateral institutions from over 100 countries are mobilising resources to achieve action. SE4All believes that working together we can to achieve a broad-based transformation of the world’s energy systems and build a more prosperous, healthier, cleaner and safer world.

Governments can create such instruments, in some instances drawing on international finance, to help fund domestic programs.

Key climate financing instruments upon which governments can draw for scaling up renewable energy include:

□ **Grant funding**

Technical assistance and grant funding for project development and document preparation can increase the renewable energy deal flow and improve the pipeline of projects ready for investment. They lay the ground for investment by supporting project development and the documentation process.

Convertible grants can be applied so that public finance supports the risky stages of project development while providing a safety margin for failure.

□ **Debt financing**

Debt is a claim arising from the issuance of loans to a project entity, which features interest payments (fixed or variable) as well as the repayment of the initial principal invested. Debt structures take priority over equity; the claims must be satisfied before equity holders can receive dividends. By assuming a senior claim over equity holders, debt results in greater risk for equity owners. While debt can be employed in the construction phase of a project, the bulk of debt financing is targeted to the point at which the project is operational and generating cash.

With longer loan tenors, lower interest rates or extended grace periods, concessional lending plays an important role in filling the gap in affordable debt financing. Debt-based instruments like on-lending and co-lending structures can break down key financing barriers, especially limited access to capital and local lending experience in renewable energy.

□ **Equity finance**

Equity is capital invested in a project or company that conveys an ownership interest to investors. It is raised through the issuance of shares and is usually uncollateralised, not repayable, and does not bear interest. Equity holders are entitled to financial returns from the profits of the company via dividends.

Equity is the basis of any entity's balance sheet, undergirding solvency and acting as a buffer against risks. Equity investors hold a residual claim on assets and receive returns (i.e. dividends) only after all other obligations have been satisfied. It is therefore considered the riskiest and (usually) the most expensive form of capital for investment in a renewable energy project. However, the equity layer is required in order to support higher-priority investor claims.

□ Risk mitigation instruments

Risk mitigation is especially important in renewable energy projects because of their high upfront capital requirement. Financial de-risking instruments accompanied by sound policy can reduce the financing costs of renewable energy investment and help attract capital at scale.

Guarantees issued by public finance institutions such as political risk insurance, partial risk guarantees and export credit guarantees can mitigate various types of investment risks, including political, policy, regulatory, credit and technology risk. Other types of risk mitigation instruments include currency guarantee fund, liquidity facilities and resource insurance (for instance geothermal energy projects).

Although the types of risks covered by guarantees in renewables are in general similar to those covered in fossil-fuel projects, a difference lies in the limited track record in many markets thus far in applying, issuing and using the guarantees for renewable energy.

In this framework, we explain where such policies and financing tools can be utilised at the different stages of the UMEME process. Ultimately, the purpose of the framework is to empower policy makers to implement changes within their countries for NDC implementation and to advance the deployment of renewables.

STAGE 1: UNDERSTAND

SUMMARY

Complete a stocktake of existing energy policy as a whole, including by identifying economic and non-economic barriers. This stocktake should consider existing levels of, and potential for, renewable energy. This stage also requires policy makers to assess the main stakeholders working on renewable energy.

IMPLEMENTATION STEPS

A

Appoint an implementation committee to carry out preliminary analysis.

B

Develop projections for energy demand and supply growth.

C

Analyse if feasible for renewable energy to be used to meet demand, and cost-benefits of using renewable energy.

D

Overview of climate and renewables policy and legal frameworks and institutions currently in place.

E

Assess roles of stakeholders (public, private, civil society) in renewable energy production process.

SKILLS REQUIRED

- Public policy management and policy and legal analysis (Steps A and D)
- Energy market analysis and projection skills (Steps B and C)
- Stakeholder mapping skills (Step E)

The “Understand” stage suggests to policy makers to establish a multi-disciplinary team to assess the status quo with respect to energy and climate policy in the country. At the completion of the five steps comprising this stage, policy makers will have all of the relevant data to make strategic plans for growing, and from which progress can be measured with respect to renewable energy in the country.

WHY is this stage important?

This stage creates a baseline measurement of energy policy, renewable energy and its potential for growth.

This is an important precursor for the stages which follow, which require policy makers to make decisions about the best policy, regulatory and financial tools to increase renewable energy in the country.

HOW will this stage be implemented?

By working together with relevant ministries of energy, natural resources, environment or other related bodies, in this stage policy makers will get a whole-of-government overview of the energy and renewable energy sector.

The implementation committee will consult broadly within government and among other stakeholders to develop the baseline.

The implementation committee should be formed on the basis of existing multi-stakeholder structures at the national level.

WHO can assist in implementing this stage?

Policy makers may be assisted in the processes outlined in this stage of development by government officials working on (renewable) energy policy at a sufficient level of seniority to have oversight of the whole-of-government.

External assistance may be valuable in respect of analysing the existing regulatory frameworks, the stakeholder groups and/or the energy projections.

A. Appoint an implementation committee to carry out preliminary analysis

Overview

In order to carry out the assessments in this stage and the one that follows, there is a need for an independent committee equipped with the expertise, influence and authority to lead the NDC implementation process. The reason for this is that the process will involve consulting widely within government and with stakeholders, and thus having a skilled and trusted committee will assist with this process. This committee could transition into a longer term government agency/department in Stage 3, Step A, once the preliminary analysis is complete.

Actions

- A1 Give authority to a committee from the national government. This may be an executive or regulator action by a Minister or the head of state or government.
- A2 Create clear terms of reference for the committee and a timeframe for completion of the work. The terms of reference may include overseeing the completion of Stages 1 and 2 of this framework.

B. Develop projections for energy demand and supply growth

Overview

This step requires policy makers to map out current energy demand/supply dynamics and future projected growth through the collection of data. A clear picture of energy (not only renewable) supply and demand dynamics is essential, to understand how renewables can contribute to the broader energy landscape.

Actions

- B1 Liaise across government to identify any existing energy demand/supply analysis.
- B2 If an energy demand/supply analysis does exist, determine whether it is current enough and whether it needs to be updated.
- B3 If no current energy demand/supply analysis exists this committee should recommend the concerned sectoral stakeholders to develop such analysis at the stage of implementation.

C. Confirm feasibility of using renewables to meet energy demand, along with the resulting costs and benefits

Overview

Once the demand/supply analysis is completed from the previous step, the resulting data can be used to carry out analysis of whether renewable energy can be efficiently used to meet demand. This will involve a high level analysis of the overall costs of installing and distributing energy from various renewables technologies as against other forms of energy. For instance, if the country has very high demand and low supply, it may be necessary to consider the relative long and short terms costs of using renewable energy against other forms of energy. It will also be important to measure investments in power generation in relative terms. This can be done through levelised cost of electricity (LCOE) methods; LCOE is a measure of a power source which attempts to compare different methods of electricity generation. The outcome from this process would be a report which may include carbon abatement cost curves for renewable energy.

Actions

- C1 Assess the full nature of the benefits created by deployment of renewable energy vs traditional energy, including reduced greenhouse gas emissions, as well as other community benefits.
- C2 Assess what renewable energy and energy efficiency technologies are available in the country and the costs of utilising such technologies.
- C3 Assess the feasibility of geographical areas where such renewable energy and energy efficiency technology could be deployed.
- C4. Assess relative costs of renewable energy vs traditional energy, using a measure such as LCOE.
- C5 Assess the requirements for expansion and upgrade of the grid to deliver increased and intermittent energy supply, and the feasibility of off-grid energy in various circumstances.
- C6 Assess other limitations (such as land use) which may inhibit renewable energy deployment.
- C7 Assess whether other externalities may impact ability to develop renewable energy projects or to meet targets.
- C8 Taking account of the above, assess whether and in what ways, renewable energy can be deployed to meet the energy demand outlined in Step B above.
- C9 Identify any climate finance or assistance available to carry out this evaluation, including by considering items listed in the “Climate Finance” section of this stage.

D. Map climate and renewables policy and legal frameworks and institutions currently in place

Overview

One of the key determinants for success in renewable energy growth is ensuring that the host country of such projects has well established and useful policy frameworks to support such renewable energy. This step involves mapping out existing climate change and renewables laws and policies without any analysis of such frameworks. A detailed gap analysis of this framework will be pursued in Stage 2, Step B.

Actions

- D1 Assess the legal framework in which energy policy is designed, considering what limitations, if any, exist on the way that energy projects can be developed and financed – particularly with regard to independent power producers.
- D2 Identify climate change laws and policies already in place and those for which international assistance has been sought, such as Nationally Appropriate Mitigation Actions (NAMAs, see reference in climate finance and assistance section below). This may include asking:
- ▶ Does a dedicated policy framework exist to implement NDCs broadly, or renewable energy specifically? Has this been transformed to legislation?
 - ▶ Are there existing policies that could help or hinder the deployment of renewable energy?
 - ▶ Are there government-supported financial incentives in place to support the uptake of renewable energy?
- D3 Identify key energy and renewable energy legislation, regulations and policies. Energy laws and policies must be assessed, as these will impact the nature of renewable energy. Key questions which policy makers should consider include:
- ▶ How is the electricity system operated and how are the roles for operation distinguished (e.g. between the transmission system operator versus distribution system operator)?
 - ▶ Does the national energy strategy and/or actions plan support further deployment of renewable energy?

Actions

- D4 Identify institutions and agencies responsible for managing climate change, energy and renewable energy policy, and any regulatory authorities of each. This may include asking questions such as:
- ▶ Is there a national regulatory agency to support renewable energy? If there are a number of departments/agencies, do effective communication channels exist?
 - ▶ Does a national statistical body collect and assess data on renewable energy?
 - ▶ Does a mechanism exist for reporting and evaluating the effectiveness of a renewable energy project?
 - ▶ Has the country conducted a national Greenhouse Gas (GHG) inventory?
Has this incorporated emissions savings from renewable energy?
- D5 Identify whether any analysis of the effectiveness of such regulatory/policy frameworks has been completed previously.
- D6 Assess international best practice for regulatory and legal frameworks for particular renewable energy policy intervention contemplated. Consider how such best practice can be introduced within the jurisdiction.
- D7 Identify any climate finance or assistance available to carry out this evaluation, including by considering items listed in the “Climate Finance” section of this stage.

E. Assess roles of stakeholders (including public, private, civil society) in the renewable energy sector

Overview

This step involves stakeholder mapping, identifying the key public, private, civil society and research bodies involved in the development of renewable energy projects and assessment of renewables policies in the country. This is important because meaningful participation by the private sector, academia and other civil society organisations is essential to the process of forming renewable energy policies and deploying renewable energy, particularly for off-grid renewable energy. Public participation is key to generating private finance, social and business acceptance of renewable energy and maximising the cross-sector benefits, such as to broader socio-economic development goals.

Actions

Carry out a stakeholder mapping process to identify the key stakeholders which will feed into and be impacted by a renewable energy policy. In doing so, consider:

- E1 The extent to which stakeholders are engaged in the policy making process and how they are involved in the renewable energy development process; and
- E2 The “Tools and Information Sources” section of this stage for some approaches to stakeholder mapping, and the “Climate Finance” section for potential climate finance to fund this process.

CLIMATE FINANCE AND ASSISTANCE

Provider	Initiative	Description	Applicability in Stage 1
Africa-EU Energy Partnership	Africa-EU Renewable Energy Co-operation Programme (RECP) .	RECP is a multi-donor programme that supports the development of markets for renewable energy in Africa. It has four action areas geared towards enabling and triggering investment: (1) policy advisory; (2) private sector co-operation; (3) access to finance and innovation; and (4) skills development.	Relevant to all steps
Africa Renewable Energy Initiative	Africa Renewable Energy Initiative (AREI)	AREI's core work areas are (1) mapping of renewable energy policies, regulations, experiences and programmes; (2) strengthening of policy, regulatory and support frameworks; (3) capacity building; (4) mobilisation of finance for incentives and investment; and (5) project development and support.	Relevant to Steps B, C and D
Climate Investment Funds	Scaling Up Renewable Energy Program (SREP)	The USD 798 million SREP supports scaled-up deployment of renewable energy solutions to increase energy access and economic opportunities through the use of renewable energy. SREP employs a pragmatic approach to support the implementation of investment plans, policy and regulatory development, the building of institutional capacities and improving co-ordination for renewable development among various stakeholders and renewable energy projects.	Relevant to all steps
European Commission	EU Energy Initiative Partnership Dialogue Facility (EUEI PDF) .	The EUEI PDF is a multi-donor facility that contributes to the achievement of the UN Sustainable Development Goals. It does so by facilitating energy dialogue and knowledge transfer; advising partners to create enabling environments for sustainable energy solutions; supporting the development of sustainable energy markets; and conducting and promoting research, innovation and capacity development.	Relevant to all steps.
	European Union's Technical Assistance Facility (TAF) for the SE4All	The TAF assists partner countries to fine tune their energy policies and regulatory frameworks to allow for increased investments in the energy sector. It assists with policy reform, capacity building, planning investment and leveraging funds. .	Relevant to all steps

CLIMATE FINANCE AND ASSISTANCE

Provider	Initiative	Description	Applicability in Stage 1
IRENA	Africa Clean Energy Corridor (CEC)	Africa Clean Energy Corridor (ACEC). The ACEC initiative calls for accelerated deployment and cross-border trade of renewable power in a continuous network from Egypt to South Africa. This involves identifying zones of high potential for the deployment of the program, strengthening the capacities of regulatory and planning bodies, expert institutions and countries to plan and build human and institutional capacity, mobilising finance and investment and raising public awareness and information.	Relevant to all steps
	Sustainable Energy Marketplace	The online platform provides lists and contacts for financial instruments and sources.	Relevant to all steps
	Renewable Energy Costs, Technology and Markets	IRENA provides accessible information in a variety of formats on renewable energy technology costs and performance.	Relevant to Step C
NAMA Facility	NAMA Facility	This public funding facility provides financial support for country-driven projects to implement NDCs and support sustainable moves towards a low-carbon pathway. Funded by the Danish, German and UK governments and the European Commission, the facility holds open competitive calls to select the most innovative and promising projects for funding.	Relevant to all steps
USAid	Power Africa	Power Africa employs a transaction and partnership driven model to remove the barriers to power project development across sub-Saharan Africa. They do this through transaction assistance, finance, policy/ regulatory reform, capacity building, legal assistance and informational resources.	Relevant to all steps

CLIMATE FINANCE AND ASSISTANCE

Provider	Initiative	Description	Applicability in Stage 1
The World Bank	Africa Renewable Energy Access Program (AFREA)	AFREA, which now in its second phase (AFREA II), provides technical assistance, advisory services and economic and social studies which support enabling conditions for increased renewable energy investments among other services. AFREA also supports a number of initiatives including the Africa Clean Cooking Energy Solutions Initiative (ACCES), the Gender and Energy Program and Lighting Africa.	Relevant to all steps
	Energy Sector Management Program (ESMAP)	ESMAP provides technical assistance and policy advice as well as knowledge products and knowledge exchange.	Relevant to all steps
	Readiness for Investment in Sustainable Energy (RISE)	RISE is a suite of indicators that assess the legal and regulatory environment for investment in sustainable energy. It establishes a framework for better depicting the national enabling environment to attract investment into sustainable energy.	Relevant to Step D

TOOLS AND INFORMATION SOURCES

Provider	Initiative	Description	Applicability in Stage 1
BSR	Stakeholder Mapping (2011)	This report can assist policy makers in understanding who their key stakeholders are, where they come from and what they are looking for.	Relevant to Step E
International Atomic Energy Agency	Energy Indicators for Sustainable Development: Guidelines and Methodologies (2005)	This report is the product of an international initiative to define a set of Energy Indicators for Sustainable Development (EISD) and corresponding methodologies and guidelines. It is a commonly used quantitative measure and provides guidelines that are useful to policy makers, energy analysts and statisticians.	Relevant to all steps
International Energy Agency (IEA) Energy Technology Roadmaps	A Guide to Development and Implementation (2014)	This guide provides policy makers with the context, information and tools needed to design, manage and implement an effective energy technology roadmap process relevant to their own local circumstances and objectives. "Phase 1: Planning and Preparation" is particularly relevant to Stage 1 of this handbook.	Relevant to all steps

TOOLS AND INFORMATION SOURCES

Provider	Initiative	Description	Applicability in Stage 1
IRENA	Renewables Readiness Assessment (RRA): Design to Action (2013)	The RRA is a country-led consultation process developed by IRENA to determine appropriate policy and regulatory choices and ensure the broadest possible buy-in from stakeholders. This publication is a guide for any country interested in conducting an RRA.	Relevant to all steps
	Project Navigator	The online platform provides guidance from the initial planning stages to create bankable renewable energy projects.	Relevant to Step B
	Global Atlas	The online resource-assessment tool helps policy makers and investors appreciate the opportunities available to develop renewables.	Relevant to Step C
	Data and reports on renewable energy benefits	Ongoing research tracks a broad range of socio-economic benefits from renewables, including job creation, income opportunities and investment in local industries.	Relevant to Step C
	Sustainable Energy Marketplace	The Sustainable Energy Marketplace is a portal to assist project developers and others scale up renewable projects.	Relevant to all steps
	Policy reports	IRENA's Knowledge, Policy and Finance Centre has established a global repository of knowledge on renewable energy policy and finance issues.	Relevant to Step D

STAGE 2: MEASURE

SUMMARY

Using the baseline data collected in Stage 1, this stage will help to identify the gaps between NDC-based renewable energy targets and existing energy policies.

IMPLEMENTATION STEPS

A

Measure gap between target and current projections for renewables.

B

Assess legal and policy barriers to achieving target.

C

Assess technical and financial barriers to achieving target, including capacity gaps.

D

Raise awareness about target and seek buy-in across government

SKILLS REQUIRED

- Energy market analysis skills (Step A)
- Renewable energy technology assessment skills (Step C)
- Public policy analysis skills (Step D)
- Legal analysis skills (Step B)

At this stage, policy makers determine the gap between their NDC-based renewable energy target and the baseline developed in Stage 1. The focus for policy makers is to determine needed policy and regulatory reforms and technical and financial requirements.

WHY is this stage important?

This stage allows policy makers to determine what next steps need to be taken to achieve NDC-based renewable energy targets.

This stage helps to understand what key inhibitors are in place, preventing greater uptake of renewable energy, and allows for a pathway to be developed to address such issues.

HOW will this stage be implemented?

Similarly to the previous stage, this stage requires policy makers to consider the renewable energy landscape at a whole-of-government level.

The implementation committee will need to consult with a variety of relevant energy related ministries and government officials, as well as key implementation stakeholders.

WHO can assist in implementing this stage?

There are some specific technical expertise requirements to carry out this stage.

Particularly, policy makers should seek out and draw on the assistance of technical experts who can assess energy supply/demand dynamics, legal experts, as well as experts on measuring financing requirements for projects.

A. Measure gap between NDC-based renewable energy and current projections

Overview

In this step, policy makers should identify the quantitative gap between any existing renewable energy target in the country and the NDC-based target. This step is an important prerequisite to the steps to ensure that the future policy plans are consistent with current level of renewable energy in the country.

Actions

- A1 Carry out an assessment of current renewable energy growth rates, or collect such verifiable data from sections of the administration or other stakeholders.
- A2 Create a standardised and equivalent measure between the renewable energy baseline (created in Stage 1 or elsewhere), the NDC-based target and renewable energy growth projects (if these figures are not already consistent). For example, policy makers could do this by quantifying these three data sources in terms of megawatt and gigawatt hours.
- A3 Identify and categorise the gaps between NDC-based targets and current renewable energy capacity projections according to sector and technology type.
- A4 Determine the rate of growth required in renewable energy across different sectors and technologies to meet the target.

B. Assess legal and policy barriers in place to achieving NDC-based renewable energy target

Overview

In order for renewables to attract a sufficient level of private finance to meet the NDC-based target, renewable energy policy needs to be embedded in a comprehensive legislative framework.

This step assesses the sufficiency of the legislative framework in country, building off the overview of the legal and policy framework completed in Stage 1, Step D.

Actions

- B1 Assess existing legal and policy frameworks against “best practice” criterion for effective and comprehensive renewable energy legal and policy frameworks (at both national and sub-national levels in respect of the public and private sector). This will also serve as a gap analysis of the existing legal, regulatory and policy frameworks for renewable energy and inform a broader reform agenda to facilitate implementation of the country’s NDC at Stages 3 and 4.
- B2 Consider climate finance available to fund this process, as set out in the “Climate Finance” section of this stage.

C. Assess technical and financial barriers to achieving NDC-based renewable energy, including capacity gaps

Overview

Building off the analysis done in Stage 1, this step calls on policy makers to identify the technical, financial and institutional capacity barriers which could inhibit renewable energy and energy efficiency growth.

Actions

- C1 Assess the gap between required finance and available resources to invest in renewable energy by:
- ▶ Quantifying the needed funds (including capital costs and external costs) for specific renewable energy and energy efficiency technologies and sectors, based on identified renewable energy targets and goals;
 - ▶ Assessing current levels of investment, and if below required amount, better understand the reasons why there are low levels of investment;
 - ▶ Identifying and assessing the factors and risks leading to high and uncertain project development costs, lack of long-term financing and availability of project financing for the deployment of renewable energy; and
 - ▶ Identifying and assessing the political and regulatory gaps (based on the analysis in the previous step) in current levels of funding for renewable energy projects at both a public and private level.
- C2 Carry out feasibility assessments of locations where future renewable energy projects can be placed by:
- ▶ Assessing the viability of the physical location for the chosen technology; and
 - ▶ Considering other factors which may impact specific technologies or may limit use - such as land rights issues, national park status of certain areas or other factors.

Actions

- C3 Assess institutional capacities by building off the stakeholder mapping process in Stage 1 Step E and identify any institutional skills gaps, by:
- ▶ Assessing whether there are adequate personnel, skills and resources within government and among stakeholders to support the implementation of increased renewable energy targets;
 - ▶ Identifying requisite training and specialised knowledge (including further research and development) at both a technology-specific and sector-specific level to meet NDC-based renewable energy targets; and
 - ▶ Determining whether the appropriate avenues for creating and managing knowledge for renewable energy projects are in place.
- C4 Identify any climate finance available to carry out this evaluation, including by considering items listed in the “Climate Finance” section of this stage.

D. Raise awareness about NDC-based renewable energy target and seek buy-in across government

Overview

In this step policy makers will determine the level of knowledge and buy-in for NDC-based renewable energy target across government. The purpose of this step is to educate other policy makers of the NDC target and build relevant buy-in for its implementation.

Actions

Conduct consultations with the government agencies and departments outlined on the stakeholder mapping process in Stage 1, Step E. These consultations should inform government departments about:

- D1 The basic outline of the Paris Agreement and NDCs;
- D2 The proposed plan for NDC implementation;
- D3 Ways in which the department/agency can be involved in the process; and
- D4 Opportunities to provide commentary or feedback to the implementing committee responsible for implementation.

CLIMATE FINANCE AND ASSISTANCE

Provider	Initiative	Description	Applicability in Stage 2
European Commission	EU Energy Initiative Partnership Dialogue Facility (EUEI PDF)	The EUEI PDF is a multi-donor facility that contributes to the achievement of the UN Sustainable Development Goals. It does so by facilitating energy dialogue and knowledge transfer; advising partners to create enabling environments for sustainable energy solutions; supporting the development of sustainable energy markets; and conducting and promoting research, innovation and capacity development.	Relevant to all steps
GFC	Green Climate Fund Readiness Programme	The Green Climate Fund Readiness Programme provides early support for readiness and preparatory activities aimed at strengthening national institutions in developing countries in respect of specific climate change issues.	Relevant to all steps
IRENA	Africa Clean Energy Corridor (ACEC)	The ACEC initiative calls for accelerated deployment and cross-border trade of renewable power in a continuous network from Egypt to South Africa. This involves identifying zones of high potential for the deployment of the program, strengthening the capacities of regulatory and planning bodies, expert institutions and countries to plan and build human and institutional capacity, mobilizing finance and investment and raising public awareness and information.	Relevant to all steps
	Sustainable Energy Marketplace	The Sustainable Energy Marketplace is a portal to assist project developers and others scale up renewable projects.	Relevant to all steps
The World Bank	Africa Renewable Energy Access Program (AFREA)	AFREA, which now in its second phase (AFREA II), provides technical assistance, advisory services and economic and social studies which support enabling conditions for increased renewable energy investments among other services.	Relevant to all steps
	Readiness for Investment in Sustainable Energy (RISE)	RISE is a suite of indicators that assess the legal and regulatory environment for investment in sustainable energy. It establishes a framework for better depicting the national enabling environment to attract investment into sustainable energy.	Relevant to Step B

TOOLS AND INFORMATION SOURCES

Provider	Initiative	Description	Applicability in Stage 2
Climate Investment Funds	Scaling Up Renewable Energy Program (SREP)	SREP offers an online course to provide policy makers, planners, and climate change practitioners with practical guidance on how to design, finance, and implement a low emissions investment plan.	Relevant to all steps
Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ)	Stock Taking Tool (2014)	This report can assist in guiding countries design a Monitoring, Reporting and Verification (MRV) tool to design renewable energy targets.	Relevant to all steps
ECOFYS	Design features of support schemes for renewable electricity (2014)	This report focuses specifically on support schemes and identifies best-practice design features of support schemes for renewable energy, with a focus on feed-in-tariffs, feed-in premiums, tenders and quotas.	Relevant to Steps B and C
EY	Renewable Energy Country Attractiveness Index (RECAI)	RECAI can be used to provide updates on key developments in the renewable energy markets and highlight positive trends in particular countries. This can help provide "best-practice guidance" on the other legal and regulatory frameworks in respect of renewable energy.	Relevant to Steps B and C
IRENA	Renewable Energy Target Setting (2015)	This report aims to shed light on the actual process of setting renewable energy targets by presenting a global overview of the diversity of renewable energy targets. It brings together insights from a wide range of countries and provides a comprehensive framework that can inform policy makers as they design or revise their renewable energy targets.	Relevant to Steps B and C.

TOOLS AND INFORMATION SOURCES

Provider	Initiative	Description	Applicability in Stage 2
United Nations Development Program	Derisking Renewable Energy Investment (2013)	This report provides a framework to support policy makers in selecting public instruments to promote renewable energy investment in developing countries.	Relevant to Steps B and C
United Nations Environment Programme (UNEP)	Emissions Gap Report (2015)	This report provides a quantitative and qualitative tool against which a country's renewable energy targets can be set.	Relevant to all steps
World Economic Forum	Scaling Up Renewables: Developing Renewable Energy Capacity – Addressing Regulatory and Infrastructure Challenges in Emerging Markets (2011)	This report provides a way of considering the impact of regulatory and infrastructure (grid) challenges by mapping the point at which they are most likely to impact project development. This may help with the identification of appropriate stakeholders to engage.	Relevant to Step B

STAGE 3: EVOLVE

SUMMARY

Using the gap analysis identified at Stage 2, policy makers can use this stage to assess, design and select preferred policy and regulatory frameworks that can catalyse investments into renewables and maximise socio-economic benefits. This stage will also involve designating a section of the administration to develop and oversee implementation of shorter term plans to achieve the NDC target.

IMPLEMENTATION STEPS

A

Designate a national government department or agency to manage renewable energy policy (if required).

B

Design and test policy interventions available to boost renewable energy.

C

Design capacity development activities to build institutional and stakeholder capacities.

D

Identify climate finance for renewable policies and projects.

E

Develop shorter-term policy implementation plans to achieve NDC target, including relevant regulatory reforms required.

SKILLS REQUIRED

- Policy analysis and development skills (Steps B and E)
- Training skills (Step C)

At this stage, policy makers are asked to “Evolve” their existing policy frameworks and institutions into ones capable of boosting renewable energy uptake in the country. Here policy makers need to make important decisions which will allow the country to achieve its target. Importantly, this stage asks policy makers to develop interim short-term plans, which cumulatively will work towards the broader NDC target.

WHY is this stage important?

Policy makers must make decisions about the policy approach they will take to boost renewable energy. At this stage, policy makers will be equipped with the necessary baseline data (from Stages 1 and 2) to make decisions about what policy approaches are required and are likely to be successful.

Another important aspect of this stage is the development and implementation of short-term interim plans, working towards the NDC target.

HOW will this stage be implemented?

While policy makers had input from across government in the previous stages, this stage will be implemented by a designated policy body with authority to make decisions about the policy approach to boosting renewable energy.

WHO can assist in implementing this stage?

This stage will require mainly in-house expertise in government. It will require policy makers to consider the analysis prepared in the previous sections and decide upon which approach they would like to pursue.

A. Designate a national government department or agency to manage renewable energy policy (if required)

Overview

Following on from the temporary committee established in Stage 1, Step A, a government institution should take charge of the policy aspects of NDC implementation, in relation to renewables. This body will be responsible for making key policy decisions about renewable energy policy going forward, but may be distinct from the “regulator”, which is responsible for the implementation of the legal framework and interfacing with stakeholders.

Actions

- A1 Consider if
- ▶ A department/agency already has authority for this process; or
 - ▶ Multiple possible departments/agencies already have authority
- being guided by the overview created in Stage 1 Step D.
- A2 If multiple agencies/departments exist, consider which one would be best placed in terms of financial and human resourcing and political factors.
- A3 If no such authority has been created, then determine the most appropriate government departments or agencies based on the following, utilising the institutional overview created in Stage 1 Step D:
- ▶ The authority of the department/agency vis-à-vis the areas of government which it will need to co-ordinate and regulate;
 - ▶ The skills, financial resources and other institutional resources and capacities available; and
 - ▶ Political dynamics of the particular department/agency.
- A3 Authorise the chosen department/agency to carry out the policy aspects of renewable energy, by passing legislation to give them such authority ensuring that its responsibilities and powers are clearly defined (and delineated from existing government bodies); and ensuring the body exists within existing reporting and accountability structures, as appropriate.

B. Design and test policy interventions available to boost renewable energy

Overview

This step is focused on identifying and testing the best-practice policy options for implementing renewable energy policy in the country. Having determined the required rates of growth of renewable energy, and carried out some analysis of the key impediments to such growth in the previous stages, this step is about designing policy options which will get around those identified issues.

Actions

- B1. Determine all of the policy options available to incentivise and support the development of renewable energy in the country. This may include some of the public policy tools discussed in the text box in this section.
- B2. Analyse the value of each of these policy options considering, among other things:
- ▶ The policy's environmental impacts and cost effectiveness;
 - ▶ Distributional equity – that is, the ability for the policy to impact all members of society, including the poorest;
 - ▶ Institutional feasibility – taking account of the analysis in Stage 2 Step C; and
 - ▶ Other factors related to suitability of the policy to the local social, economic and political context. It may not be feasible to introduce a carbon pricing mechanism in a country where institutional capacity is too low to accurately measure emission levels.
- B2. Identify any international climate finance available to assist in the implementation of these policy measures, or at least the testing of them.
- B3. Test the various policy options. This may involve running controlled trials or pilot sites where policy options are implemented and then evaluated.

The “Tools and Information Sources” section at the end of this stage provides some approaches for analysing various policy options.

PUBLIC POLICY TOOLS FOR INCENTIVISING RENEWABLE ENERGY

- **Feed-in-tariffs** – government issues long-term power purchase agreements at a fixed price / fixed premium to the market price. The benefit of these policies is that they allow the government to create some security for investors and mitigate some of the risks of investing in upfront production costs, knowing that there is a longer term return from investment.
- **Auctions** – government issues a call for tenders to procure a certain generation capacity for renewable-based electricity. Project developers participating in the auction typically submit a bid with a price per unit of electricity at which they are able to realise the project. Auctions facilitate real-price discovery and allow greater predictability about capacity.
- **Regulatory quotas** – which require power generators / utilities to generate a proportion of electricity from renewable energy sources;
- **Tax credit schemes** – tax incentives for renewable energy projects, thus creating fiscal incentives for their development;
- **Reform of fossil-fuel subsidies** – removal of or significant reform to subsidisation of fossil fuel intensive industries can help remove market distortions which make fossil fuel based energy supply more lucrative; and
- **Carbon pricing mechanisms** – by regulating to introduce a price on carbon, by, for instance, capping carbon emissions, can help create a level playing field between renewable energy and fossil-fuel intensive technologies.

C. Design capacity development activities to build institutional and stakeholder capacities

Overview

This step follows the analysis in Stage 2 Step C, which looked at the capacity gaps within institutions and among stakeholders which may inhibit renewable energy increases. This step focuses on approaches for redressing the capacity gaps previously identified.

Actions

- C1. Identify and rank the most significant capacity gaps among government and stakeholder.
- C2. Identify innovative approaches to capacity development activities within government, civil society and the private sector. This may include some of the activities listed in the “Climate Finance” section of this stage.

D. Identify climate finance for renewable policies and projects

Overview

While Step B of this stage considered some of the public policy instruments which could be implemented to incentivise the development of renewable energy projects, this step will consider the financing instruments and tools needed to channel finance into projects.

Actions

- D1. Consult with banking and private finance stakeholders in country and internationally to determine which private sector financing instruments are available for renewables in the country, including debt financing (such as loans) and equity financing instruments, options, guarantees and others.
- D2. Based on the previous consultation consider what public financing mechanisms could be used to finance projects, and which may not be available through private finance, or which may be required to attract private finance. This may include:
 - ▶ Grants issued by the government to provide some up-front financing for project development or commercialisation;
 - ▶ Subsidies on development costs of projects;
 - ▶ Payment guarantees. The government or multilateral financial institutions/development finance institutions may also issue other forms of guarantees such as political risk guarantees; and
 - ▶ Concessional loans issued by the government where private financiers refuse to issue loans, or in addition to private sector finance.
- D3. In determining which public finance tools to utilise, work with private financiers on determining what additional forms of finance may be unlocked in combination with the above listed public finance mechanisms.
- D4. Document the available mechanisms for the stakeholder consultations which will be carried out in Stage 4 below.
- D5. Identify any climate finance available to carry out this evaluation, including by considering items listed in the “Climate Finance” section of this stage.

E. Develop shorter-term policy implementation plans, including regulatory reforms, to achieve NDC target

Overview

Taking account of the previous stages, and particularly Stage 1, and Stage 2 Steps A to C, this step develops incremental short term plans to achieving the larger NDC renewable energy target. These plans are important instruments which will be the basis from which government measures its progress towards implementation.

Actions

- E1. Determine a time-frame which aligns with relevant political cycles, which is short enough to measure and long enough to achieve policy reform. This may be a period of three to five years.
- E2. Based on the previous steps in this stage, determine a high-level plan for implementation of the chosen policy instruments, and identify the specific policies to be implemented in the first plan period.
- E3. Determine what should be included in the first plan period, considering:
 - ▶ The required finance for renewable energy projects;
 - ▶ Necessary regulatory reforms to attract investment;
 - ▶ Approaches to minimise impact of externalities;
 - ▶ Required feasibility assessments; and
 - ▶ Number and location of projects;
- E4. Develop and publish the relevant short term plans, and the evaluations of such plans (discussed in Stage 5).

CLIMATE FINANCE AND ASSISTANCE

Provider	Initiative	Description	Applicability in Stage 3
Abu Dhabi Fund for Development (ADFD)	IRENA/ADFD Project Facility	The IRENA/ADFD Project Facility offers concessional loans of USD 5 million to USD 15 million for renewable energy projects recommended by IRENA in developing countries.	Relevant to Step D
African Development Bank	Africa 50	Africa 50 is an Investment Bank for infrastructure in Africa that focuses on high-impact national and regional projects in the energy, transport, ICT and water sectors.	Relevant to Step D
African Development Bank	African Development Fund Partial Risk Guarantee (ADF-PRG)	The ADF-PRG leverages resources from the private sector and other co-financiers for ADF countries, including fragile states and incentivises governments to undertake policy and fiscal reforms necessary to mitigate performance-related risks.	Relevant to Step D
	Africa Renewable Energy Fund (AREF)	AREF invests into small hydro, wind, geothermal, solar, stranded gas and biomass projects across Sub-Saharan Africa, excluding South Africa.	Relevant to Step D
	Sustainable Energy Fund for Africa (SEFA)	SEFA provides grants to support the public sector improve the enabling environment for private sector investments in renewable energy (including the implementation of legal, regulatory and policy regimes that provide clear rules for project development).	Relevant to all steps
Africa Enterprise Challenge Fund	Africa Enterprise Challenge Fund (AECF)	AECF is a USD 244 million fund supported by the International Fund for Agricultural Developments and the governments of Australia, Denmark, the Netherlands, Sweden and the UK. It is managed by KPMG and makes funding available to private sector companies through competitions. In doing so it hopes to stimulate private sector entrepreneurs in Africa to innovate and find profitable ways of improving access to markets.	Relevant to Step D
Africa-EU Energy Partnership	Africa-EU Energy Co-operation Programme (RECP)	RECP is a multi-donor programme that supports the development of markets for renewable energy in Africa. It has four action areas geared towards enabling and triggering investment - (1) policy advisory, (2) private sector co-operation, (3) access to finance and innovation and (4) skills development.	Relevant to all steps
Africa Renewable Energy Initiative	Africa Renewable Energy Initiative (AREI)	AREI's core work areas are (1) mapping of renewable energy policies, regulations, experiences and programmes; (2) strengthening of policy, regulatory and support frameworks; (3) capacity building; (4) mobilisation of finance for incentives and investment; and (5) project development and support.	Relevant to all steps

CLIMATE FINANCE AND ASSISTANCE

Provider	Initiative	Description	Applicability in Stage 3
Climate Investment Funds	Clean Technology Fund (CTF)	The USD 5.3 billion CTF provides middle-income countries with highly concessional financing to scale up the demonstration, deployment and transfer of low carbon technologies in renewable energy, energy efficiency and sustainable transport.	Relevant to Step D
	Scaling Up Renewable Energy Program (SREP)	The USD 798 million SREP supports scaled-up deployment of renewable energy solutions to increase energy access and economic opportunities through the use of renewable energy. SREP employs a pragmatic approach to support the implementation of investment plans, policy and regulatory development, the building of institutional capacities and improving co-ordination for renewable development among various stakeholders and renewable energy projects.	Relevant to all steps
ECOWAS Centre for Renewable Energy and Energy Efficiency (ECREEE)	ECOWAS Renewable Energy Facility (EREF)	EREF is a grant facility which provides grant co-funding for small to medium sized renewable energy and energy efficiency projects and businesses. In its second phase (2016-2020), EREF will broaden its portfolio of financial instruments and support schemes such as micro credits.	Relevant to Step D
Energising Development	Energising Development Partnership Program (EnDev)	EnDev is a multi-donor partnership, currently financed and governed by the governments of the Netherlands, Norway, Australia, the United Kingdom and Sweden. With a focus on establishing sustainable energy solutions, EnDev's projects include developing markets for energy products and services by using targeted awareness campaigns, assisting entrepreneurs with energy-related businesses, transferring knowledge regarding technology and business skills, technical assistance and capacity building. They also provide financial support to energy-related businesses to kick-start markets or buy down capital investments, but not for operational costs.	Relevant to Steps C and D
Energy Access Ventures	Energy Access Ventures (EAV)	EAV is a venture firm that invests in entrepreneurial companies that increase access to electricity in Sub-Saharan Africa.	Relevant to Step D
Energy and Environment Partnership	Energy and Environment Partnership Southern and East Africa (EEP S&EA)	Now in its second phase (2013-2017) with funding of EUR 35 million, EEP S&EA's objective is to contribute to the reduction of poverty by promoting inclusive and job-creating green economy and by improving energy security in the Southern and East Africa regions while mitigating global climate change. To qualify for support projects should demonstrate high innovation in delivering energy services, facilitating technology transfer, encouraging co-operating and local stakeholders' participation in projects.	Relevant to Step D

CLIMATE FINANCE AND ASSISTANCE

Provider	Initiative	Description	Applicability in Stage 3
European Commission	EU Energy Initiative Partnership Dialogue Facility (EUEI PDF)	The EUEI PDF is a multi-donor facility that contributes to the achievement of the UN Sustainable Development Goals. It does so by facilitating energy dialogue and knowledge transfer; advising partners to create enabling environments for sustainable energy solutions; supporting the development of sustainable energy markets; and conducting and promoting research, innovation and capacity development.	
	European Union's Technical Assistance Facility (TAF) for the SE4All	The TAF assists partner countries to fine tune their energy policies and regulatory frameworks to allow for increased investments in the energy sector. It assists with policy reform, capacity building, planning investment and leveraging funds.	
European Commission and European Union Member States	European Union Africa Infrastructure Trust Fund (EU-AITF)	The EU-AITF aims to increase investment in infrastructure in Sub-Saharan Africa by blending long term loans from participating financiers with grant resources. As EU-AITF grants must be linked to loans provided by one or more EU-AITF Financier, only the Financiers are entitled to submit grant requests.	Relevant to Step D
European Investment Bank	EU-EDFI Private Sector Development Facility (EEDF)	The EEDF has proposed EUR 43 million to assist in two ways – a guarantee to support private sector projects in the energy sector that address the objectives of SE4All but are either at an early stage of development or have a higher risk profile; and technical assistance to support feasibility studies, capacity building and advisory services.	Relevant to Steps C and D
The European Investment Bank Group	Global Energy Efficiency and Renewable Energy Fund (GEEREF)	GEEREF is a Fund-of-Funds catalysing private sector capital into clean energy projects in developing countries and economies in transition. It invests in private equity funds which focus on renewable energy and energy efficiency projects in emerging markets.	Relevant to Step D
European Union	Electrification Financing Initiative (ElectriFI)	ElectriFI supports renewable energy investments, with a focus on rural electrification and a total budget above EUR 0.5 million. They provide funding for a maximum term of seven years. The first Invitation for Proposals has closed but a second Invitation for Proposals is planned for the fourth quarter of 2016.	Relevant to Step D
IRENA	Africa Clean Energy Corridor (ACEC)	The ACEC initiative calls for accelerated deployment and cross-border trade of renewable power in a continuous network from Egypt to South Africa. This involves identifying zones of high potential for the deployment of the program, strengthening the capacities of regulatory and planning bodies, expert institutions and countries to plan and build human and institutional capacity, mobilising finance and investment and raising public awareness and information.	Relevant to Step C

CLIMATE FINANCE AND ASSISTANCE

Provider	Initiative	Description	Applicability in Stage 3
Geothermal Risk Mitigation Facility for Eastern Africa	Geothermal Risk Mitigation Facility for Eastern Africa (GRMF)	The GRMF, established by the African Union Commission, the German Federal Ministry for Economic Co-operation and Development and the EU-Africa Infrastructure Trust, funds geothermal development in Eastern Africa. Specifically, it co-finances surface studies and drilling programmes aimed at developing geothermal energy projects. The 4th Application Round was launched in May 2016.	Relevant to Step D
GEF/UN Foundation/UK Aid/BUMB	Seed Capital Assistance Facility (SCAF)	SCAF's vision is to increase the availability of investment for early-stage development of low-carbon projects in developing countries.	Relevant to all steps
New Partnership for Africa's Development (NEPAD)	NEPAD Infrastructure Project Preparation Facility (IPPF)	The IPPF is a multi-donor trust fund managed by the African Development Bank on behalf of NEPAD. It supports the development of regional and continental infrastructure with grants to African governments.	Relevant to all steps
Private Infrastructure Development Group	Emerging Africa Infrastructure Fund (EAIF)	EAIF mobilises public and private capital to lend to private sector businesses creating, improving or expanding infrastructure.	Relevant to Step D
Netherlands Development Finance Company and others	Climate Investor One	Climate Investor One supports projects through several stages of their lives to ensure they get off the ground and attract new investors. It provides technical, environmental and social due diligence support at an early-stage. It then cuts out complex negotiations with multiple providers by financing a large part of construction costs with equity, removing the need for more costly debt finance, as well as a refinancing facility.	Relevant to Step D
Multiple Organisations	CTI Private Financing Advisory Network (PFAN)	Identifies promising clean energy projects at an early stage and provides mentoring for development of a business plan, investment pitch, and growth strategy.	Relevant to Step D
SE4All Africa Hub	Green Mini-Grids Market Development Programme (GMG MDP)	The objective of the GMG MDP is to support the scale-up of investments in commercially viable green mini-grid projects through a broad range of interventions to improve the enabling environment. In doing so, they will provide policy and regulatory support as well as assisting with access to finance.	Relevant to all steps
UK and Norwegian Governments	Green Africa Power LLP	Purpose is to stimulate private sector investment in renewable energy in sub-Saharan Africa. Acting as a long-term source of financing and policy support to projects.	Relevant to Step D

CLIMATE FINANCE AND ASSISTANCE

Provider	Initiative	Description	Applicability in Stage 3
United Nations Economic Commission for Africa, African Union Commission, NEPAD Policy and Co-ordinating Agency	Biofuels Programme for Household and Transport Energy Use	The Biofuels Programme for Household and Transport Energy Use provides policy and regulatory support to explore modern biofuels development in Africa.	Relevant to Steps A, B and E
USAid	Power Africa	Power Africa employs a transaction and partnership driven model to remove the barriers to power project development across sub-Saharan Africa. They do this through transaction assistance, finance, policy/ regulatory reform, capacity building, legal assistance and informational resources.	Relevant to all steps
US Trade and Development Agency	U.S.-Africa Clean Energy Finance (ACEF) initiative	The initiative helps promising clean energy projects develop into viable candidates for financing by providing small amounts of early-stage funding for essential inputs, such as technical and feasibility studies.	Relevant to Step D
United Nation Foundation	Global Alliance for Clean Cookstoves	The Global Alliance for Clean Cookstoves works with a network of public, private and non-profit partners to accelerate the production, deployment, and use of clean and efficient cookstoves and fuel in developing countries.	Relevant to all steps
World Bank Group	Scaling Solar	Scaling Solar aims to make privately funded grid-connected solar projects operational within two years and at competitive tariffs. They offer advice to assess the right size and location for solar PV power plants in a country's grid; simple and rapid tendering; fully developed templates; competitive financing and insurance; and risk management and credit enhancement products.	Relevant to Step D
The World Bank	World Bank Guarantees Program	The World Bank Guarantees Program provides payment guarantees, loan guarantees and policy-based guarantees to mobilise private investment for strategic projects; mitigate key government-related risks to enable financial viability and bankability; enhance credit-quality of sovereign and sub-sovereign obligors to achieve acceptable or affordable levels; reduce costs and improve financing terms for projects and governments; and ensure long-term sustainability of projects.	Relevant to Step D

TOOLS AND INFORMATION SOURCES

Provider	Initiative	Description	Applicability in Stage 3
Africa-EU Renewable Energy Co-operation Programme	Vocational Training for Renewable Energy in Africa (2014)	This publication provides an assessment of the status quo of technical training for renewable energy in Africa and addresses the most critical issues to be taken into account when providing training. It can provide policy makers with an overview of the sector continent-wide and inform decision-making on support interventions for renewable energy skills development.	Relevant to Step C
BSR	Stakeholder Mapping (2011)	This report can assist policy makers in understanding who their key stakeholders are, where they come from and what they are looking for.	Relevant to Step C
Climate Change Support Team of the UN Secretary General	Trends in Private Sector Climate Finance (2015)	This report can assist policy makers in understanding the climate funding environment.	Relevant to Step D
Climate Investment Funds	Scaling Up Renewable Energy Program (SREP)	SREP offers an online course to provide policy makers, planners, and climate change practitioners with practical guidance on how to design, finance, and implement a low emissions investment plan.	Relevant to all steps
International Energy Agency (IEA)	Energy Technology Roadmaps: A Guide to Development and Implementation (2014)	This guide provides policy makers with the context, information and tools needed to design, manage and implement an effective energy technology roadmap process relevant to their own local circumstances and objectives.	Relevant to all steps
IRENA	Project Navigator	IRENA's Project Navigator helps with the project development process by providing step-by-step information to move from project initiation to full blown project documentation for sustainability.	Relevant for Step D
	Sustainable Energy Marketplace		
	Auctions Report		Relevant for Step B
	Adapting Policies Report		Relevant for Step B

TOOLS AND INFORMATION SOURCES

Provider	Initiative	Description	Applicability in Stage 3
IRENA	Unlocking RE Investment Report		Relevant for Step C
	The Age of Renewable Power: Designing National Roadmaps for a Successful Transformation (2015).	This report focuses on the role that policy makers will play in the transition towards renewable power generation and provides a framework for the development of roadmaps to achieve this change.	Relevant to all steps
UNIDO	Scaling Up Renewable Energy in Africa (2009)	This paper proposes that the scaling up of renewable energy to target levels could be achieved through interventions on policy and institutional environment; technology acquisition, development and integration; investment mobilisation; and regional integration, networking and capacity building.	Relevant to Steps B, C and E
United Nations Development Program	Derisking Renewable Energy Investment (2013).	This report provides a framework to support policy makers in selecting public instruments to promote renewable energy investment in developing countries.	Relevant to Step B
United Nations Industrial Development Organisation (UNIDO) and the Renewable Energy and Energy Efficiency Partnership (REEEP)	Sustainable Energy Regulation and Policymaking Training Manual and http://africa-toolkit.reeep.org/ (2006).	This training package provides an introduction to the key issues relating to the energy market and energy regulation	Relevant to all steps

TOOLS AND INFORMATION SOURCES

Provider	Initiative	Description	Applicability in Stage 3
World Economic Forum	Scaling Up Renewables: Developing Renewable Energy Capacity – Addressing Regulatory and Infrastructure Challenges in Emerging Markets (2011)	This report provides a way of considering the impact of regulatory and infrastructure (grid) challenges by mapping the point at which they are most likely to impact project development. This may help with the identification of appropriate stakeholders to engage.	Relevant to Step C
The World Bank	Financing Renewable Energy Options for Developing Financing Instruments Using Public Funds (2013)	This report provides an overview of some of the public funding mechanisms that can be used to support renewable energy projects.	Relevant to Step D

STAGE 4: MODIFY

SUMMARY

At this stage policy makers carry out the necessary reform, and other policy processes, required to translate the policy decisions made previously into a new renewable energy legislative framework. This includes passing laws and appointing regulators to manage the process. This stage is, in effect, the implementation of the short term plans designed in the Stage 3, working towards the broader NDC goal.

IMPLEMENTATION STEPS

A

Identify the most appropriate legislative reform process to effect policy selections.

B

Working with relevant government bodies for legislative drafting and passage of law.

C

Appoint relevant regulator to be legally authorised to implement the legislative framework.

D

Regulator engages with private sector financiers and project developers.

E

Regulator educates stakeholders regarding new legislative framework.

SKILLS REQUIRED

- Expertise in designing procurement processes (Steps C and D)
- Communication skills and stakeholder engagement skills (Steps D and E)
- Legal expertise for legislative reform (Steps A and B)
- Political economy analysis (Step A)

Having decided on the policy approaches to increase renewable energy in the previous stage, this stage calls on policy makers to go through the process of modifying the legislative framework for renewables and to appoint a regulator to implement that framework.

WHY is this stage important?

International best practice for increasing renewable energy is to ensure that policy approaches are grounded in secure legislative frameworks. Secure legal frameworks are useful because they help to attract private (and public) financing to projects.

In this stage, policy makers are required to translate their policy decisions made earlier into legislative frameworks.

HOW will this stage be implemented?

International best practice for increasing renewable energy is to ensure that policy approaches are grounded in secure legislative frameworks. Secure legal frameworks are useful because they help to attract private (and public) financing to projects.

In this stage, policy makers are required to translate their policy decisions made earlier into legislative frameworks.

WHO can assist in implementing?

This process is also one which is reliant on internal expertise.

However, external expertise may be called upon to assess the most appropriate legislative approach to carry out reforms – as independent legal advice on this may be valuable.

A. Identify the most appropriate legislative reform process to effect policy selections

Overview

In this step, policy makers must translate the policy options decided in Stage 3 into an appropriate and effective legislative framework. This step sets out the actions required by policy makers to effect such legal reform, taking account of the political economy realities of the country.

Actions

- A1 Consider the most effective legal approaches for introducing the policy options decided in Stage 3 into law. This will involve considering the legal instruments (legislation, subordinate legislation, regulations etc) which can be used to translate the policy into a regulatory framework.
- A2 Consider how current political dynamics within the country will impact the feasibility of using the chosen legal instrument. Key questions policy makers could consider for this action include:
- ▶ Whether the passage of the legal instrument is possible in current political settings?
 - ▶ Could the policy approaches be effected through subordinate legislation, regulations or executive actions?
 - ▶ Who are the key supporters of such a regulatory framework?
- A3 Develop a legal strategy, taking account of the points above, to effect such a strategy.

Given the legal nature of this process, policy makers may be aided in carrying out this stage through strategic legal advice from government or external legal advisors.

B. Working with relevant government bodies for legislative drafting and passage of law

Overview

Once a pathway for legislative reform is decided in Step A, policy makers should work with the relevant government bodies, ministries, parliamentary officials and experts to translate the policy concepts into a legally secure legislative framework.

Actions

- B1 Identify the relevant ministries and government officials that will be responsible for legislative drafting of reforms from Step A.
- B2 Depending on the legal strategy employed in Step A, it may be necessary for different areas of the bureaucracy to be responsible for different aspects of the legislative reform. If that is the case, the department managing the policy process will play a role in co-ordinating the different legislative drafting tasks, including establishing deadlines and milestones for legislative drafting tasks.
- B3 Abide by any processes required for appropriate input, commentary and analysis of legislative drafting by relevant stakeholders. This could involve allowing stakeholder consultation in response to different stages of the drafting and passage of the law, which is to be expanded on at Step D.

C. Appoint relevant regulator to be legally authorised to implement the legislative framework

Overview

Whereas Stage 3 Step A calls for a relevant government body to be appointed to determine renewable policy, this step requires the appointment of a regulator and establishment of a regulatory body which can enforce and manage compliance with the newly established legal framework on renewable energy designed in the previous step.

Actions

- C1 Establish a national regulatory agency to support the new regulatory framework on renewable energy. This may be appointing an existing body from within the respective government body responsible for energy or establishing a new agency.
- C2 Ensure effective communication channels between the national regulatory agency and the policy body established in Stage 3 Step A;
- C3 Create legal authority for the regulator agency, including giving it responsibility for compliance related issues and enforcement of the new legislative framework.
- C4 Develop a regulatory approach that the regulator will use to manage stakeholder. This may include taking a “risk-based” approach to regulation or other approaches.
- C5 Develop mechanisms for the regulator to interface with entities and financiers involved in renewable energy projects.

D. Regulator engages with private sector financiers and project developers

Overview

During the early years of a new renewable energy legislative platform, the newly appointed regulator must engage with private sector financiers, project developers and the community at large to understand any concerns they are having or have identified with the development process.

Actions

- D1 Carry out targeted consultations with industry regarding issues such as foreign investment rules, banking restrictions, matters related to property law and more broadly, creating and enabling a business environment for the private sector to flourish and to encourage institutional equity.
- D2 Seek appropriate expert input advice, recommendations and opinions on the legislative framework, including from think-tanks, academic institutions and industry.
- D3 Create a process by which stakeholders can provide feedback to the regulator on the policy, which will feed into the assessment of the renewable policy and legal framework in Stage 5.

E. Regulator educates stakeholders regarding new legislative framework

Overview

The appointed renewable energy regulator must engage with the myriad of renewable energy stakeholders to ensure that there is sufficient up-take of the opportunities available under the revised renewable energy framework. This step is also critical to ensure there are no community concerns about the implementation of renewable energy projects.

Actions

- E1 Prepare and distribute regular updates on the implementation of the legislative framework to affected parties through the regulator.
- E2 Educate stakeholders through regular forums on the policy and legislative framework. This includes engaging domestic and international stakeholders.
- E3 Create support mechanisms to manage knowledge related to the legislative changes between the regulator and stakeholders.
- E4 Provide opportunities for stakeholders to comment on the new legislative framework and provide regular submissions on areas of concern.
- E5 Host regular workshops between the regulator and stakeholders to ensure that there is an appropriate dialogue, education and transfer of opinions on the new legislative framework and any amendments.

CLIMATE FINANCE AND ASSISTANCE

Provider	Initiative	Description	Applicability in Stage 4
African Development Bank Group	African Renewable Energy Fund (AREF)	AREF invests into small hydro, wind, geothermal, solar, stranded gas and biomass projects across Sub-Saharan Africa, excluding South Africa.	Relevant to Step D
	Sustainable Energy Fund for Africa (SEFA)	SEFA provides grants to support the public sector improve the enabling environment for private sector investments in renewable energy (including the implementation of legal, regulatory and policy regimes that provide clear rules for project development).	Relevant to all steps
Africa Enterprise Challenge Fund	Africa Enterprise Challenge Fund (AECF)	AECF is a USD 244 million fund supported by the International Fund for Agricultural Developments and the governments of Australia, Denmark, the Netherlands, Sweden and the UK. It is managed by KPMG and makes funding available to private sector companies through competitions. In doing so it hopes to stimulate private sector entrepreneurs in Africa to innovate and find profitable ways of improving access to markets.	Relevant to Step D
Africa-EU Energy Partnership	Africa-EU Energy Co-operation Programme (RECP)	RECP is a multi-donor programme that supports the development of markets for renewable energy in Africa. It has four action areas geared towards enabling and triggering investment - (1) policy advisory, (2) private sector co-operation, (3) access to finance and innovation and (4) skills development.	Relevant to all steps
Africa Renewable Energy Initiative	Africa Renewable Energy Initiative (AREI)	AREI's core work areas are (1) mapping of renewable energy policies, regulations, experiences and programmes; (2) strengthening of policy, regulatory and support frameworks; (3) capacity building; (4) mobilisation of finance for incentives and investment; and (5) project development and support.	Relevant to all steps.

CLIMATE FINANCE AND ASSISTANCE

Provider	Initiative	Description	Applicability in Stage 4
Climate Investment Funds	Scaling Up Renewable Energy Program (SREP)	The USD 798 million SREP supports scaled-up deployment of renewable energy solutions to increase energy access and economic opportunities through the use of renewable energy. SREP employs a pragmatic approach to support the implementation of investment plans, policy and regulatory development, the building of institutional capacities and improving co-ordination for renewable development among various stakeholders and renewable energy projects.	Relevant to all steps
European Commission	European Union's Technical Assistance Facility (TAF) for the SE4All	The TAF assists partner countries to fine tune their energy policies and regulatory frameworks to allow for increased investments in the energy sector. It assists with policy reform, capacity building, planning investment and leveraging funds.	Relevant to all steps
United Nations Economic Commission for Africa, African Union Commission, NEPAD Policy and Co-ordinating Agency	Biofuels Programme for Household and Transport Energy Use	The Biofuels Programme for Household and Transport Energy Use provides policy and regulatory support to explore modern biofuels development in Africa. It also provides case studies on the experiences of enabling policies and regulatory reforms that policy makers can use to develop appropriate legislative reform.	Relevant to all steps.
USAid	Power Africa	Power Africa employs a transaction and partnership driven model to remove the barriers to power project development across sub-Saharan Africa. They do this through transaction assistance, finance, policy/ regulatory reform, capacity building, legal assistance and informational resources.	Relevant to all steps
The World Bank	Africa Renewable Energy Access Program (AFREA)	AFREA, which now in its second phase (AFREA II), provides technical assistance, advisory services and economic and social studies which support enabling conditions for increased renewable energy investments among other services.	Relevant to all steps, particularly Step D

TOOLS AND INFORMATION SOURCES

Provider	Initiative	Description	Applicability in Stage 4
Cambridge Economic Policy Associates for the Department of Energy and Climate Change)	Policy risks in Renewable Energy Investments in Developing Countries (2014).	This report assesses policy risks for renewables and how this can be best addressed by the international donor community.	Relevant to Step D
Climate Change Support Team of the UN Secretary General	Trends in Private Sector Climate Finance	This report can assist policy makers in understanding the climate funding environment.	Relevant to Step D
Climate Policy Initiative	Risk Mitigation Instruments for Renewable Energy in Developing Countries: A Case Study on Hydropower in Africa (2015).	This report suggests risk mitigation instruments provided by public finance institutions that can help reduce financing costs and mobilise private capital in financing infrastructure.	Relevant to Step D
IRENA	Adapting Renewable Energy Policies to Dynamic Market Conditions (2014)	The report highlights challenges arising from the rapidly changing global market, along with various possible policy responses.	Relevant to all steps
	Renewable Energy Auctions: A Guide to Design (2015)	This set of guides examines all stages of the auction process and advises policy makers various possible approaches.	Relevant to all steps

TOOLS AND INFORMATION SOURCES

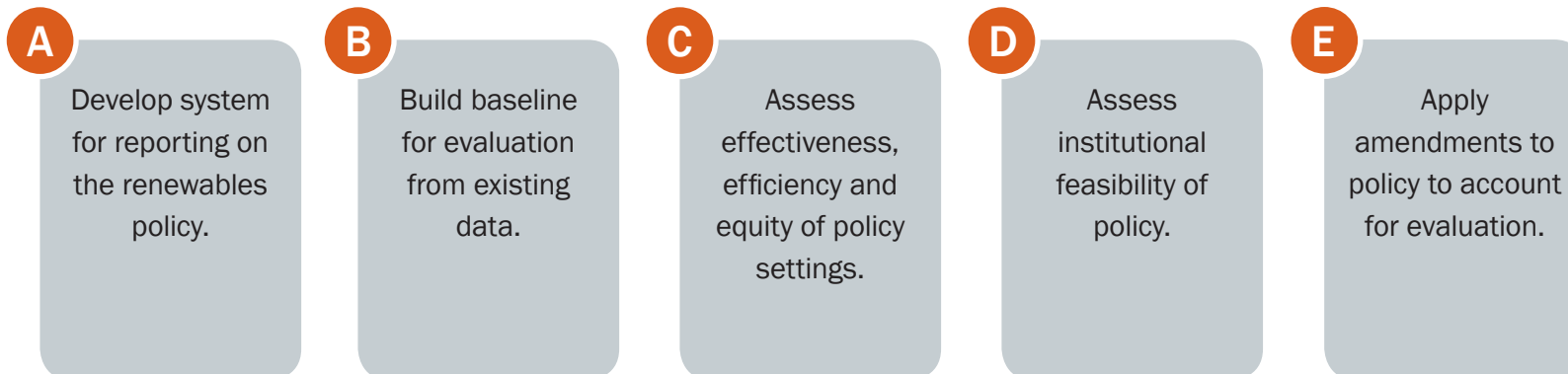
Provider	Initiative	Description	Applicability in Stage 4
Public-Private Infrastructure Advisory Facility	Public-Private Infrastructure Advisory Facility	This report provides several key lessons for successful renewable energy programs in South Africa, and areas for reform to encourage private sector investment.	Relevant to all steps
The World Bank	Financing Renewable Energy Options for Developing Financing Instruments Using Public Funds report	This provides an overview of some of the public funding mechanisms that can be used to support renewable energy projects.	Relevant to Step D

STAGE 5: EVALUATE

SUMMARY

The final Stage involves results-based monitoring and evaluation of the NDC implementation process, by analysing the effectiveness, efficiency and equity of the short-term policy plans and making adjustments wherever needed.

IMPLEMENTATION STEPS



SKILLS REQUIRED

- Monitoring & Evaluating expertise (Step C)
- Emissions measurement expertise (Step B)
- Policy design and analysis skills (Steps A, D and E)

This final stage of the process involves monitoring and evaluating the implementation of the renewable energy policy, to ensure it is achieving the policy outcomes which it set out to achieve in an effective, efficient and equitable manner.

WHY is this stage important?

This stage is important because it allows policy makers to understand whether their policy designs are working or whether any changes need to be made to improve the policy.

HOW will this stage be implemented?

Through a series of monitoring and evaluation tools, this stage will guide policy makers through a process for assessing the renewable energy policy.

WHO can assist in implementing?

Carrying out monitoring and evaluation can be assisted by external experts on the topic, or it can also be done in-house through a robust public process.

This stage may also require analysts capable of assessing and measuring emissions reductions in the country and whether they are attributable to the reformed policy.

A. Develop system for reporting on the renewables policy

Overview

In order to monitor and evaluate the effectiveness of the policy, a process is required for the renewables policy framework is monitored and by which progress is reported back to government by stakeholders involved in the industry. This step outlines how a reporting framework can be constructed.

Reporting is an important pre-requisite to assessing the effectiveness of existing policy framework and also to provide the government an evidence base to report on progress of the NDC implementation to the UN under the Paris Agreement.

Actions

- A1 Develop a reporting framework into which stakeholders report, among other things:
- ▶ New projects which have been developed, and the levels of electricity generation from each;
 - ▶ Financial, regulatory, policy or social and environmental challenges being faced by such projects; and
 - ▶ How current policy settings and achievements compare internationally to other similar countries, as well as approaches considered to be “best-practice” globally.
- Some approaches to developing such reporting frameworks are included in the “Tools and Information Sources” section of this stage.
- A2 If there is a reporting framework of greenhouse gas emissions in the country (through a climate change law or policy) or of measuring new electricity generating assets, then ensure that this is amended to account for the deployment of new renewable energy projects.
- A3 Develop a platform through which results from monitoring will be reported publicly – such as through a website or having reports tabled in parliament. This will allow civil society and public scrutiny of the renewable energy policy development.

B. Build baseline for evaluation from existing data

Overview

This step will use the data collected in Stage 1 as a baseline of emissions and energy levels from which to carry out the ongoing evaluation of the renewable energy policies. This is important because it will allow the government to measure the difference that increased renewable energy has on a number of social, economic and environmental indicators.

Actions

- B1 Ensure that data collected in Stage 1 is standardised.
- B2 Document the baseline levels of emissions, electrification, and electricity produced by renewable energy.
- B3 Ensure that the baseline and accompanying background data is available publicly.

C. Assess effectiveness, efficiency and equity of policy settings

Overview

The next part of the process involves assessing the progress achieved with renewable energy policies. This will allow the government to make relevant changes to the policy as required (as discussed in Step E below).

Actions

- C1 Assess the effectiveness of the renewable policy – this is concerned with measuring and benchmarking the outcomes renewable energy policies have delivered. There are two approaches for measuring effectiveness:
- ▶ Measure the installed capacity or electricity output and growth rates thereof, either in absolute or percentage terms. This would involve comparing the baseline data collected in Stage 1 against progress at the time of the evaluation. The problem with this method is that it takes no account of a country’s particular stage of economic development and may not be appropriate in developing countries.
 - ▶ Assess deployment against a country’s overall *potential*. There are two popular measurement tools which can be deployed to this end – see “Tools and Information Sources” section below.
- C2 Assess the efficiency of the policy, which refers to the ratio of outcomes to financial inputs. This measure is only relevant once renewable energy policies have started to work and an industry is starting to develop. It will not be an appropriate measure where no industry yet exists. There are several tools available to carry out this measurement process – see text box in this section.
- C3 Assess the equity of the policy, which refers to the distributional consequences of a policy, including the fairness and justice of the spread of renewable energy. For instance, a key issue with respect to renewable energy is the higher cost for establishment and operations. A key equity consideration is looking at who pays the increased costs for the use of renewable energy – and particularly, whether it is the most vulnerable or others who are more capable of paying the costs. There are a number of approaches for measuring equity including:

- ▶ Considering energy expenditure as a percentage of household income across the country. This can allow government to understand the relative importance of energy costs across different social groups and in comparison to other commodities; and
- ▶ Comparing the relative importance of policy-induced changes to energy consumption, such as through renewable energy policies, and expenditure across different social or income groups. This approach allows the government to target particular groups, such as indigenous communities, to understand what impact, if any, renewable energy policies are having for energy access.

There are also a number of tools for these measures noted below.

The tools and measures used in this step were developed for developed country energy markets and rely on substantial data having been collected on an operational renewable energy industry. Therefore, they may not always be implementable in developing country contexts, or they may need to be amended to take account of the specific settings on the ground. The referenced tools however do offer some alternative approaches for developing countries specifically.

METHODS FOR MEASURING EFFICIENCY OF A POLICY

- Static efficiency – which simply measures the price per MW of installed capacity or price per megawatt-hour (MWh) of electricity generated ([further details of how to apply this measurement tool are available here](#));
- Total cost indicator – provides a graphical comparison of the full cost of payments with the amount of additional electricity generation that they incentivise ([further detail available here](#)).
- Dynamic efficiency – similar to static efficiency but it also adds a future time dimension by including how much innovation is triggered to improve the ratio of outcomes ([further details of how to apply this measurement tool are available here](#)).

D. Assess institutional feasibility of policy

Overview

The final aspect of the measurement and evaluation process is to consider the institutional feasibility of the policy. This is important to allow the government to assess whether the policy and legal framework which has been introduced is able to be effectively implemented by the institutions assigned to administer it.

Actions

- D1 Conduct a whole policy review, the data for which should be collected progressively over a number of years, but reported at set intervals – say of five years. There are a number of factors which reviews of institutional feasibility ought to consider, including:
- ▶ The capacity levels of government institutions – human capital, resources of staff, and quality of stakeholder engagement;
 - ▶ The political viability of the renewable energy policy - which might include the levels of stakeholder support, credibility of policy in the eyes of the public, and the political appropriateness of the policy; and
 - ▶ The effectiveness of governance frameworks for renewable energy - which can be measured based on the feedback from stakeholders and the ability of the policy to achieve its objectives.

Useful methods for carrying out this analysis include: case studies of renewable energy projects, Impact assessments or other approaches.

E. Apply amendments to policy to account evaluation

Overview

This step utilises the monitoring and evaluation responses above in this stage to make amendments to existing policy and legal settings. This is important to ensure that the policy and legal frameworks are constantly re-evaluated and reformed to keep abreast of industry and market dynamics and other changes.

Actions

- E1 Following the review process in Step D, issue a detailed report and recommendations to government, outlining what areas of reform are needed to ensure the renewable energy policy remains viable and adaptable.
- E2 Repeat the process outlined in Stage 4 Step B to ensure that such recommendations are included in reformed legal and policy frameworks.

CLIMATE FINANCE AND ASSISTANCE

Provider	Initiative	Description	Applicability in Stage 5
Africa Renewable Energy Initiative	Africa Renewable Energy Initiative (AREI)	AREI's core work areas are (1) mapping of renewable energy policies, regulations, experiences and programmes; (2) strengthening of policy, regulatory and support frameworks; (3) capacity building; (4) mobilisation of finance for incentives and investment; and (5) project development and support.	Relevant to all steps
European Commission	EU Energy Initiative Partnership Dialogue Facility (EUEI PDF)	The EUEI PDF is a multi-donor facility that contributes to the achievement of the UN Sustainable Development Goals. It does so by facilitating energy dialogue and knowledge transfer; advising partners to create enabling environments for sustainable energy solutions; supporting the development of sustainable energy markets; and conducting and promoting research, innovation and capacity development.	Relevant to all steps
	European Union's Technical Assistance Facility (TAF) for the SE4All	The TAF assists partner countries to fine tune their energy policies and regulatory frameworks to allow for increased investments in the energy sector. It assists with policy reform, capacity building, planning investment and leveraging funds.	Relevant to all steps
European Commission/ European Union Energy Initiative	ACP-EU Energy Facility	The ACP-EU Energy Facility was established in 2005 to co-finance projects on increasing access to modern and sustainable energy services. It is now in its final stage with an emphasis on end-of project monitoring.	Relevant to Steps A – D
USAid	Power Africa	Power Africa employs a transaction and partnership driven model to remove the barriers to power project development across sub-Saharan Africa. They do this through transaction assistance, finance, policy/ regulatory reform, capacity building, legal assistance and informational resources.	Relevant to all steps

TOOLS AND INFORMATION SOURCES

Provider	Initiative	Description	Applicability in Stage 5
European Commission	Assessing the performance of renewables support policies with quantitative indicators (2014)	This report provides a quantitative measurement tool, designed to consider a number of contextual factors when carrying out evaluations.	Relevant to all steps
International Energy Agency (IEA)	Deploying Renewables: Principles for Effective Policies (2011)	This report provides another policy impact indicator which can assist in the quantitative measure of policy development. It considers the extent to which a country has progressed towards the World Energy Outlook projections.	Relevant to Steps C, D and E
	Energy Development Index (EDI)	The EDI is another commonly used quantitative measure. It allows policy makers to track a country's energy development over time, including the population's access to energy and the amount of renewable energy available as part of this access.	Relevant to all steps
International Atomic Energy Agency	Energy Indicators for Sustainable Development: Guidelines and Methodologies (2005)	This report is the product of an international initiative to define a set of Energy Indicators for Sustainable Development (EISD) and corresponding methodologies and guidelines. It is a commonly used quantitative measure and provides guidelines that are useful to policy makers, energy analysts and statisticians.	Relevant to all steps

TOOLS AND INFORMATION SOURCES

Provider	Initiative	Description	Applicability in Stage 5
IRENA	Evaluating Renewable Energy Policy: A Review of Criteria and Indicators for Assessment (2014)	This policy paper is concerned with the criteria and indicators used to assess renewable energy policies.	Relevant to all steps
	Project Navigator	IRENA's Project Navigator platform helps project development and provides a set of tools and templates to assist project management.	Relevant to all steps
Practical Action	Total Energy Access (TEA)	Practical Action is an international NGO that uses technology to challenge poverty in developing countries. TEA is their framework for understanding people's needs for energy services	Relevant to all steps
USAid	Power Africa	Power Africa employs a transaction and partnership driven model to remove the barriers to power project development across sub-Saharan Africa. They do this through transaction assistance, finance, policy/regulatory reform, capacity building, legal assistance and informational resources.	Relevant to all steps
University of Oxford – Oxford Poverty and Human Development Initiative (OPHI)	OPHI Working Paper No. 42 – Measuring Energy Poverty: Focusing on What Matters (2011)	This paper proposes a composite index to measure energy poverty, the Multidimensional Energy Poverty Index (MEPI). This is a commonly used qualitative measure that allows policy makers to get a deeper insight into the quality of electricity services.	Relevant to all steps
The World Bank	Ten Steps to a Results-Based Monitoring and Evaluation System (2004)	This handbook can help policy makers to design and construct a results-based monitoring and evaluation system in the public sector.	Relevant to all steps



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