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Competitive Selection and Support for Renewable Energy

Policy Guidelines

Prepared jointly by the European Bank for Reconstruction and Development and the Energy Community Secretariat in collaboration with the International Renewable Energy Agency

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IRENA
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1. Introduction and Overview

1.1 Context

Reducing greenhouse gas emissions from the energy sector is critical to mitigate climate change. IRENA-IEA projections[1] show that to limit global warming to less than 2°C, global emissions from the energy sector must fall by more than 70% from 31 $GtCO_{2e}$ in 2015 to less than 9 $GtCO_{2e}$ in 2050. The electricity sector is in turn central to achieving that goal, through a combination of (i) decarbonising electricity production and (ii) shifting the energy sources for activities such as heating and transport to electricity. The decarbonisation of electricity production depends heavily on massive deployment of renewable energy (**RE**). IRENA-IEA projections show that in a scenario where global warming is kept to less than 2°C, RE will account for 65% of total primary energy supply in 2050. Moreover, RE will contribute around 37% of the required reductions in energy-related GHG emissions, relative to a business-as-usual baseline.

Support to RE in the electricity sector has historically been provided through a number of means – ranging from quota schemes based on tradable green certificates to administratively determined feed-in tariffs. The choice of the support scheme is frequently dependent on the maturity of the electricity market. Despite sustained reductions in the cost of several forms of RE, in some cases in the region costs remain higher than for conventional sources. More importantly, the characteristics of electricity production from many RE sources differ markedly from the characteristics of conventional sources such as coal and gas. In particular most renewables tend to have a near-zero marginal cost of generation, which is much lower than their average generation cost. This characteristic poses challenges for the design of electricity markets and for attracting investments in RE in energy-only markets. Accordingly it remains necessary in most cases for the regulatory framework of electricity sectors to provide some form of minimum support to RE delivered under a long-term contractual arrangement.

Amongst policy makers, a broad consensus has emerged that competition is a transparent means to identify the level of support to be provided to utility scale RE projects (and to select the projects to which support is provided). The benefits of competition may not, however, be realised for small scale or distributed projects given the comparatively high transaction costs and multiple potential projects and agents. This is anticipated in the EU's 2014 Guidelines on State Aid for Environmental Protection and Energy[2] (EEAG 2014-2020, or the "EU State Aid Guidelines", discussed further below. EEAG 2014-2020 sets thresholds below which competitive bidding processes do not need to be employed. The focus of the present Guidelines is on larger projects, which fall above those thresholds.

For the purposes of the present Guidelines the term "auctions" refers to approaches that share the common feature of relying on a competitive process rather than an administrative determination. The term is used throughout these Guidelines to refer to different types of competitive bidding processes – ranging from simple tenders to more complex selection methods.

Auctions encourage bidders to reveal costs, promote cost-efficient development and can effectively drive costs down. Auctions also provide a transparent and objective means for identifying the recipients of this financial support. Granting support for RE on market-based principles, namely through the introduction of auctions, has been widely used across a range of countries – both EU and non-EU – and appear to be partly responsible for the sharp reductions in the cost of supporting RE seen in recent years. As a general rule, competitive bidding is mandated in the EU for many types of projects by the EU State Aid Guidelines.

The primary goal of RE auctions is to meet renewable energy objectives in the most cost-effective way. This is achieved by facilitating competition among credible RE developers. Consumers benefit through lower costs, while policy makers achieve greater control over the RE sector's development. Auctions can also help address policy makers' concerns to be able to demonstrate that regulation is ensuring the "right" level of support for RE and avoiding overcompensation of investors. The ability of auctions to address such concerns, which have

[1] IRENA-IEA (2017), "Perspectives for the Energy Transition: Investment Needs for a Low Carbon Energy System"

[2] Official Journal of the European Union C 200, 28.6.2014, p. 1–55 (available at: http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:52014XC0628(01). The Energy Community Secretariat has issued non-binding Policy Guidelines on Reform of the Support Schemes for Promotion of Energy from Renewable Sources on 24 November 2015 (PG 04/2015). These clarify that the Energy Community Secretariat in communication with national enforcement authorities will follow the considerations and requirements set out in the EEAG 2014-2020 when assessing the compatibility of environmental and energy aid with the functioning of the Energy Community Treaty (see here: https://www.energy-community.org/dam/jcr:6dd484b2-7403-405e-b47a-dff650468448/PG_05_2015_ECS_RE_support.pdf).

sometimes led to renegotiations or retroactive changes, can reduce the regulatory risks faced by investors. Investors also benefit from the transparency provided by well-designed auctions, allowing them to compete on a level playing field.

Auctions need to be carefully designed to ensure that projects are delivered. The nature of auctions encourages bidders to drive down costs with a view to being successful in the auction. This poses the risk of the so-called winner's curse – i.e. winning projects have unrealistically low bids and cannot ultimately be delivered. As emphasised below, many features of auctions can be designed to ensure that auctions attract credible bidders who can ultimately successfully deliver their bids.

1.2 Purpose and scope

The purpose of the Policy Guidelines is to set out the common position of the Energy Community Secretariat (the **EnCS**) and the European Bank for Reconstruction and Development (the **EBRD**) on the key design principles that should be adopted to competitively set the level, and select the recipients, of public support for renewable electricity.[3] The parameters underpinning these design principles are that:

- The arrangements should deliver support for RE at the lowest feasible cost, and greatest efficiency, consistent with the other parameters set out below.
- The arrangements should deliver the desired level of renewable energy deployment in the desired timeframe (i.e. they should ensure that bids are credible and can be delivered).
- The arrangements should be transparent, open, predictable and objective. They should have, and maintain, broad investor confidence.
- The arrangements should minimise market distortions and facilitate the development of markets.

1.3 Application

These Guidelines are intended primarily for the countries which are both parties to the Energy Community Treaty[4] and EBRD countries of operation. These countries are, in general, at a relatively early stage of electricity market liberalisation and, with some exceptions, have limited penetration of renewable energy (see Annex 3 for the current status of renewable energy in each of the countries). Accordingly any RE support mechanism must be relatively simple in order to build confidence, experience and familiarity amongst all stakeholders (such as government authorities, regulators, network operators, developers and investors).

Over time, as countries progressively liberalise their electricity markets and grow their renewable energy sectors, they may adopt more complex RE support schemes that are tailored to their specific contexts. We therefore include, alongside the specific recommendations on different design choices, a more general summary of the trade-offs that policy makers should consider when designing auctions. These trade-offs are summarised in Box 1 below.

Despite the specific focus on countries that are both EBRD countries of operation and parties to the Energy Community Treaty, these Guidelines draw upon a wide spectrum of international experience – notably, the Guidelines have been prepared in collaboration with IRENA and draw on its extensive work on designing and assessment of different elements of auctions.[5] Consequently, the principles outlined will also be relevant to many other countries.

1.4 Structure of Guidelines

These Guidelines are divided into four broad areas – namely:

(1) the overall framework for the competitive process;
(2) choices relating to what is being procured;
(3) choices relating to the selection process; and
(4) the mechanism for the delivery of RE support.

[3] These Guidelines are non-binding and also consistent with the EBRD's Procurement Policies and Rules for private sector operations.

[4] As at 1 November 2017, those countries are: Albania, Bosnia and Herzegovina, Former Yugoslav Republic of Macedonia, Georgia, Kosovo, Moldova, Montenegro, Serbia, Ukraine.

[5] See IRENA and CEM (2015), "Renewable Energy Auctions; A Guide to Design" and IRENA (2017), "Renewable Energy Auctions: Analysing 2016"

2. Guidelines on the Overall Framework

2.1 Develop an overall strategy for RE development

➔ Policy makers should develop and publish a strategy for the development of renewable energy, including: *long-term plans* that identify targets for renewable energy generation (for example, looking 10 years ahead); and *short-term plans* identifying the auctions that will deliver the target for the coming two to three years. Plans should be developed with a view to promoting a viable long-term RE market that is of a sufficient scale to interest market participants and can be easily integrated in the competitive electricity market. Long-term targets should be consistent with any international obligations and be part of an integrated energy and climate policy planning framework. Moreover, the strategy for implementing plans should be consistent with the legal framework – notably State aid and competition laws.

2.2 Have clear plans for future RE auctions

➔ Short-term plans should provide stakeholders with a transparent and predictable schedule of upcoming RE auctions. Upcoming RE auctions may include both stand-alone auctions when the particular circumstances require so (for example, one-off tenders for specific sites[6]) and systematic auction schemes (for example, successive rounds of auctions). Such plans should be consistent with overall targets for RE, as well as other plans for the energy sector such as market opening and the development of grid infrastructure. Any new or revised support scheme should be notified to the domestic State aid authority. Individual instances of aid awarded under a scheme do not generally have to be notified. In the EU State aid authorisation for a scheme is valid for a maximum of 10 years after which it must be re-notified. The length for which support is provided to individual projects through a scheme is not subject to the 10 years limit.

2.3 Structure initial auction schemes to learn lessons

➔ It is important that auction schemes are structured to allow lessons to be learnt at initial stages – notably by holding a "pilot" auction at the start of a broader auction scheme. The pilot should feature in the short-term plan for RE development. A pilot auction should have characteristics similar to the planned auction scheme, and its features should be designed to provide meaningful lessons to policy makers and market participants. For example, project size restrictions should be such that the types of market participants the pilot attracts are similar to those targeted by the auction scheme itself.

2.4 Nominate a credible institution to administer the auction

➔ Credibility is the key selection criteria for the institution administering the auction. Features such as the technical capacity, human resource capacity, legal standing and reputation will all contribute to the credibility of the administrator, and should therefore be used as criteria for its selection. The choice of the institution may vary across countries, and may include regional institutions. The institution should have an active role in shaping the design of the auctions (if it does not already have primary responsibility for designing them).

2.5 Manage the competitive process transparently

➔ The timeline for each auction should be published prior to its start and should be binding on the body administering the auction. The timeline should include all of the main steps of the process (announcement of auction; consultation; opening of bid round; bid submission; closing of bid round; selection/evaluation; contract signature and plant commissioning). Moreover, it should provide sufficient time to complete each step (for example, auctions for wind will need to allow adequate time – typically more than 12 months – for resource assessments). A comprehensive communication strategy should be developed – including, for example, setting-up a specific website and conducting bidder information sessions. The policy maker should publish a comprehensive set of supporting documents, including templates of all key agreements (e.g. offtake, grid connection, land use) and information on the institution administering the auction.

[6] For example, if there is a particular site in the country that is well-suited to RE development and has few competing uses.

2.6 Establish a process for dispute resolution

➔ The establishment of effective dispute resolution mechanisms is necessary at all stages of auctions (i.e. from the initial stages of procurement to project commissioning). Key aspects of the auction (for example, bid bonds) should be covered by contractual arrangements with clear dispute resolution mechanisms that are acceptable to stakeholders. In markets with limited experience of RE support mechanisms the use of an international dispute resolution process will increase investor confidence and hence lower the cost of capital. The Energy Community Secretariat established a Dispute Resolution and Negotiation Center facilitating alternative dispute resolution.

3. Guidelines on Choices Relating to what is Being Procured

3.1 Set a limit on the total size of the auction

➔ For each auction, policy makers should set fixed quantity limits in terms of the amount of RE generation *capacity* to be supported. This allows policy makers to retain close control of the development of RE, including its budgetary implications and impact on the electricity system and markets (two factors that should be taken into account when determining the capacity to be supported). In case RE support costs are significantly different from what was expected (for example, because of lower than expected bids), the policy maker may amend short-term plans. The policy maker should set out in advance a transparent process for how it will make such amendments. In such cases, policy makers should also investigate the basis for low prices with a view to verifying that prices are credible. Once the RE sector is more developed, policy makers can consider other approaches to determine the quantity limit (such as a budget-based cap).

3.2 Consider using a price ceiling

➔ A price ceiling is a useful design element to limit the budgetary risk faced by the auction administrator and should be used in particular in initial auctions that are based on capacity-based quantity limits. The auction administrator can use the previously determined feed-in-tariff (potentially adjusted for recent developments) as a benchmark for the price ceiling. Furthermore, the price ceiling should only be disclosed after the auction and only in specific scenarios (e.g. when the maximum price is a binding constraint in the auction).

3.3 Set size limits for individual projects

➔ Maximum size restrictions on individual projects participating in an auction should be set to find a balance between:

(a) achieving economies of scale so that consumers benefit from lower cost;

(b) attracting a wider pool of international developers (which are likely to find larger projects more attractive); and

(c) securing participation of multiple project developers to broaden the pool of market participants. This can be achieved by placing restrictions on maximum size (and the number of investors participating in more than one project) so that multiple projects can be awarded to different investors for the overall level of capacity to be procured in an auction.

➔ Minimum restrictions may be imposed to ensure that the administrative burden of assessing bids is proportionate to the level of capacity procured.
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3.4 Start with technology specific auctions

➔ When moving to auctions to support RE, technology-specific auctions should be used as an initial step – in particular, when required by: the need to achieve diversification; network constraints; and grid stability. Once RE auctions become well established, technology neutral auctions should be considered.

3.5 Consider location specific auctions

➔ For the first auctions in a market, or in situations where the specific circumstances warrant it,[7] specifying the location(s) and making land available is likely to reduce the upfront costs for bidders and thus generate lower support costs. If the authorities choose to make land plots available for RE development in line with the applicable State aid rules, this will reduce costs and barriers to entry for developers. If the RE segment is well-established so that a number of developers are well-placed to develop projects, the choice of location should be left to the

[7] For example, if there is a particular site in the country that is well-suited to RE development and has few competing uses.

market, with policy makers focussing on providing detailed and specific criteria to ensure that projects proposed in an auction are comparable (see below).

3.6 Completely define the project scope

➔ Bidders should be provided with a complete and specific description of what the projects they are bidding for must deliver. This should include clarity on technological requirements. Moreover, the procedures and requirements (as well as their associated costs) for integration of RE into electricity systems and markets should be clearly identified. In particular:

Grid connection: requirements for grid connection and the provision of supporting infrastructure should be clearly specified so that bidders can identify their associated costs (and contractual documents should include provisions for situations beyond the responsibility of the developer (for example, grid connection is not granted)). Moreover, such requirements should be specified in a way that ensures all bids are comparable.

Balancing: Balancing responsibility may be postponed to the point in time when a liquid intraday electricity market is accessible to RE producers. Moreover, other elements such as well-specified balancing market arrangements and the ability to use balancing aggregators are also desirable to enable the introduction of balancing responsibility.

Dispatch: the support arrangements should ensure priority of dispatch for renewable producers insofar as the secure operation of the national electricity system permits. Where the support is delivered through the mechanism of a contract-for-differences, the RE producers should ensure that electricity produced is offered in the day-ahead market at a price that ensures the electricity is actually sold and thus dispatched. The network operators should compensate the renewable producers when their production is curtailed. The curtailment of electricity produced from renewable energy sources should be based on transparent and non-discriminatory criteria amongst energy producers. The network operators should take grid and market-related operational measures in advance to minimize the curtailments of electricity produced from renewable energy sources.

4. Guidelines on Choices Relating to the Selection Process

4.1 Rely on appropriately sized bid bonds to ensure a sufficient number of well qualified bidders

➔ Successful auctions require a number of bidders that exceeds the available capacity. Accordingly it is important to have qualification requirements that are not excessively onerous and that do not impose high transaction costs. Successful auctions should also deter the participation of unqualified bidders who may bid unrealistically and be unable to deliver the required capacity. The use of bid bonds and completion bonds (see below) set at appropriate levels can meet these twin goals. Other criteria for financial capacity may no longer be needed if bonds are used, thus reducing the administrative burden (of policy makers) and transaction costs (of bidders) associated with the auction.

➔ In the initial stages of moving to auctions, when the existing pool of RE developers or investors is small, bid-bond requirements should be kept low. It is recommended that they are set towards the lower end of the range observed internationally, which is 1.5-3.5% of expected project costs. Such levels should encourage competition and provide a disincentive only to the most speculative of bidders. The level of the bid bond should account for the stringency of the technical, financial and good standing qualification criteria used. A higher bid bond would require less stringent criteria, and a lower one stricter criteria.

4.2 Ensure that bidders have the technical capacity to deliver the project

➔ Qualification criteria related the technical capacity of the developer to deliver the project do not need to require extensive or country-specific past experience. Moreover, the primary focus of the assessment of technical capacity should be on the technical characteristics of the proposed project (e.g. compliance of the proposed technology with the auction's requirements, environmental permits, grid connection plans). A streamlined and transparent process should be developed for bidders to obtain energy licences, land and environmental permits as well as grid connection plans if bidders are required to obtain these prior to the auction.

4.3 Ensure that bidders are in good standing

➔ A basic proof of identity and legal status (i.e. ownership structure, shareholders, directors, disclosure of current or potential legal issues and court/arbitration/litigation cases) should be provided. Clear criteria for exclusion of bidders on legal grounds should be set out in the auction rules.

4.4 Award projects on the basis of the price bid

➔ For simplicity and effectiveness, the selection of winning bids from those that meet all qualification criteria should be based solely on the criterion of price (without any adjustments for other factors).

4.5 Use a simple procedure for selecting projects

➔ For the first RE auctions in a sector, a single, sealed bid process[8] is recommended. This brings clarity and simplicity to the process and lowers administrative efforts. More sophisticated approaches could be considered as expertise grows and the market develops, but add little benefit in the initial stages of implementing auctions. Policy makers should develop well-specified rules that cover different outcomes such as tied bids or bids exceeding the quantity limit. Furthermore, the development of the auction rules should consider the interaction between different rounds of auctions. For example, losing bidders in one round could pre-qualify for subsequent auctions so as to reduce administrative costs.

4.6 Use pay-as-bid to determine the level of support

➔ Using pay-as-bid is recommended to determine the level of support, as the benefits of simplicity will most likely outweigh the costs of strategic bidding. Other approaches such as marginal clearing prices or hybrid designs could be considered in the future as the number of projects subject to auctions increases and the market for renewable energy in the country matures.

4.7 Ensure successful bidders deliver the project with the characteristics requested

➔ Monitoring milestones between the award of the support to the project and its commissioning should be specified by the policy maker, along with a schedule of penalties. A completion bond, set at a level above the bid bond, should be required. The level of the bond should strike a balance between ensuring adequate incentives to complete construction and avoiding excessive cost.

➔ Post-commissioning performance milestones and penalties can also be included to ensure that performance of the project is consistent with the characteristics specified in the RE auction.

[8] This process means that all bidders submit a single bid (by a specified deadline) that is not publicly disclosed.

Box 1: Trade-offs to Consider in the Design of Auctions

The design features of auctions need to be adapted to country-specific conditions – in particular, as the renewable energy sector grows and market arrangements evolve over time, countries may adopt more complex RE support schemes that are tailored to their specific contexts. Key design features of auctions include choices relating to what is being procured, qualification requirements, the selection process, bidders' liabilities and the terms of the support arrangements. Across the different auction design elements, policy makers should carefully consider the inherent trade-offs between potentially the most cost-effective outcome and other objectives.

What is being procured

Policy makers can choose between standalone auctions or systematic auction schemes. When the objective is to meet urgent capacity needs, the total volume of desired capacity can be auctioned at once through a standalone auction. If the objective is to further enhance investors' confidence for a more cost-effective outcome, the total volume auctioned can be divided into different rounds in a systematic auctioning scheme. A limit on the project size or on the volume that can be won by one bidder also has an impact on the price. Such measures diversify the portfolio of generators and reduce risks in case projects do not materialise. Auctions that have no limit on project size can benefit from economies of scale and may therefore lead to lower prices.

In defining what is being procured in an auction, ambition for a more diversified energy mix must be weighed against cost-effectiveness. When the objective is to develop a particular technology or if requirements for grid stability or network constraints restrict technological options, a technology-specific auction can be selected. Technology-specific auctions may be simpler to administer. Technology-neutral auctions that allow competition between technologies will tend to minimise costs.

Transaction costs incurred by developers can be reduced through site- or project-specific auctions where the government (or another entity) takes on the responsibility of site selection, resource and impact assessments, grid connection and obtaining necessary permits. These steps can therefore help to reduce costs. However, if the RE segment is well-established so that a number of developers are well-placed to develop projects, the market may be better placed to identify project locations.

Qualification requirements

Qualification requirements are key determinants of the level of competition in the auction and the prices offered by developers. If requirements in terms of permitting and documentation processes are too demanding, the transaction costs incurred by developers can be reflected in higher prices. Moreover, while the requirement for an extensive track record in the field can help ensure timely project completion, it may also limit the participation to traditional, large players in the sector, which in turn affects the overall development of the sector. Qualification requirements can also reflect other goals such as socio-economic objectives.

The selection process

The selection process is at the heart of the auction. The criteria for selection and features such as ceiling prices can significantly impact the price outcomes. A simple selection process based solely on the price can improve cost competitiveness. However, policy makers can achieve other objectives (for example, socio-economic objectives or ensuring the provision of electricity closer to demand centres) by incorporating non-monetary criteria. In addition, when the main objective is to ensure cost effectiveness, a low ceiling price can be set, above which bids are not considered. However, there is a risk that a sub-optimal amount of renewable energy will be contracted, as it could lead to the rejection of some reasonable bids.

Bidders' liabilities and the terms of the support arrangements

In determining the bidders' liabilities in the auction process, there are various ways to allocate different risks between the project developer, the auction administrator and the support counterparty. Auction design features can limit the developers' risks but these risks would then be passed on to others. Bidders' liabilities involve commitment to contract signing and project completion, post-commissioning performance milestones and penalties, and other risks during operation (e.g. currency risk). Such liabilities can be reduced to encourage bidder participation and increase the level of competition, leading to lower prices. However, lower liabilities during the pre-commissioning phase (for example, low completion guarantees) increase the risk of project delays or of the project not being delivered altogether. Likewise, lower liabilities for post-commissioning performance increase the risk of underproduction. Currency, inflation or grid connection risks can be reduced through provisions in the support contract, but such risks will then be borne by the support counterparty.

5. Delivery of RE Support

5.1 Establish a support counterparty

➔ A support counterparty should be established for delivering support to RE projects. Moreover, it is vital that: (1) the support counterparty has a creditworthiness that allows projects to raise financing and reduce the cost of capital; and (2) that the creditworthiness of the counterparty is maintained for the full duration of the support period.

5.2 Define the support mechanism

➔ The competitive process determines the level of support provided in the form of a fixed price per unit (for example, kWh) of electricity delivered – the strike price. Support could be provided to projects through a contract-for-difference with the successful bidder (instead of a power purchase agreement). The support granted under this contract is the difference between the price with which the successful bidder was awarded (the strike price) and the market price for electricity (the reference price). This arrangement should be symmetrical so that the RE producer pays to the support provider the difference if the reference price exceeds the strike price.

➔ This presupposes the existence of a reference electricity price at which a producer can be realistically expected to sell electricity (for example, a liquid day-ahead electricity market accessible to the RE producer). When such a reference price does not exist (in particular, when no liquid day-ahead electricity market covering the area exists), policy makers should provide support in the form of a guaranteed purchase at a feed-in tariff (where the level of the tariff is determined by an auction). In such cases, the terms of the support for a given project can envisage switching from the feed-in-tariff to a sliding-scale feed-in premium once an easily accessible reference price materialises.

➔ In both cases, in countries prone to exchange rate fluctuations, the price support mechanism should employ (at least partial) exchange rate indexing to cover costs – particularly capital costs (including financing costs), that are incurred in hard currency.

5.3 Document the support arrangements in a contract

➔ The support arrangements should be documented in a model contract between the support counterparty and the RE generator (this could, for example, be the contract for difference (see above), under which the RE producer shall be obliged to sell its electricity on the market). The contract should provide for adequate dispute resolution procedures (including alternative dispute resolution mechanisms)[9] and include provisions for unforeseen circumstances (i.e. force majeure terms) as well as those that are beyond the control of the RE producer.

[9] For example, a Dispute Resolution and Negotiation Center facilitating alternative dispute resolution established by the Energy Community Secretariat.

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