

HOW TO ATTRACT INVESTORS VIA RENEWABLE AUCTIONS IN UKRAINE GOING FORWARD

Renewable Auctions Results and Expectations

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13.03.2025

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INTRODUCTION OF RENEWABLE AUCTIONS IN UKRAINE

- *April 2019:* Parliament adopted amendments launching transition from the Feed-in Tariff (FiT) system to a new incentive scheme for renewables. FiT system resulted in non-controlled construction of renewable power plants and rapid growth of intermittent generation in Ukraine.
- *1 January 2020:* Start of requirement that state incentives are provided to new renewable projects selected via auctions, exempting specific projects still eligible to use FiT system. This step by Ukraine was in line with best practices from the EU.
- *January 2020 – December 2023:* No renewable auctions announced, despite requirement. This is primarily due to a lack of incentive for the state to increase the financial burden of the Transmission System Operator (TSO), as the transmission tariff compensates the difference between auction prices and market prices to TSO.
- The Guaranteed Buyer, off-taker of renewable electricity under both FiT and auction schemes, has not been able to ensure 100% payments even to operational renewable power plants working at the FiT.
- *June 2023:* The Law on Green Transformation modified the renewable auction to a contracts for difference (CfD) scheme, where the GB compensates a positive difference between auction price and indicative market price for electricity sold by the winner.



GENERAL LEGAL FRAMEWORK FOR RENEWABLE AUCTIONS

Potential bidders	Investors in renewable projects Renewable electricity generators
Renewable auction customer (Responsible to arrange and hold auctions)	Guaranteed Buyer (GB), state enterprise to be further corporatized into 100% state-owned joint stock company
Electronic trading platform operator (Responsible to hold auctions on platform)	Prozorro.Sale
Generation type	Either auctions differentiated by technology or technologically neutral auctions
Annual quotas, auction schedule	Subject to the Ukraine government approval. Quotas are suggested by the TSO
Ceiling prices	Drafted by Energy Regulator according to limits specified in law, with further approval by Ukraine government
Period for holding of auctions	Before 31 December 2029
Contract type between winner and the Guaranteed Buyer, Duration	Contract for differences (CfD) with reverse payments when indicative market price exceeds auction price. Duration – 12 years



KEY RESTRICTIONS AND REQUIREMENTS APPLIED FOR PILOT RENEWABLE AUCTIONS (1/2)

Auction participation restrictions	Prohibited for renewable projects holding previous incentives- for instance, the FiT or CfD under previous renewable auctions
Collateral requirements	<ul style="list-style-type: none"> • <i>Guaranteed fee for auction participation</i> - unconditional and irrevocable bank guarantee: EUR 5,000 / 1 MW of installed capacity • <i>Collateral for CfD</i> - unconditional and irrevocable bank guarantee: EUR 15,000 / 1 MW of installed capacity
Payment source under CfD	TSO transmission tariff (Renewable PSO component)
Price caps	<p>For solar/wind projects:</p> <ul style="list-style-type: none"> • EUR 90 per 1 MWh for auctions held before 31 Dec 2024 • EUR 80 per 1 MWh for auctions held after 1 Jan 2025 <p>For other projects – EUR 120 per 1 MWh</p>
Capacity allocated to winners	Not to exceed 80% of total capacity as offered by all bidders
Capacity allocated to one beneficial owner	In total, not to exceed 25% of annual quota for respective year. Quota of 50% to be applied starting in 2025

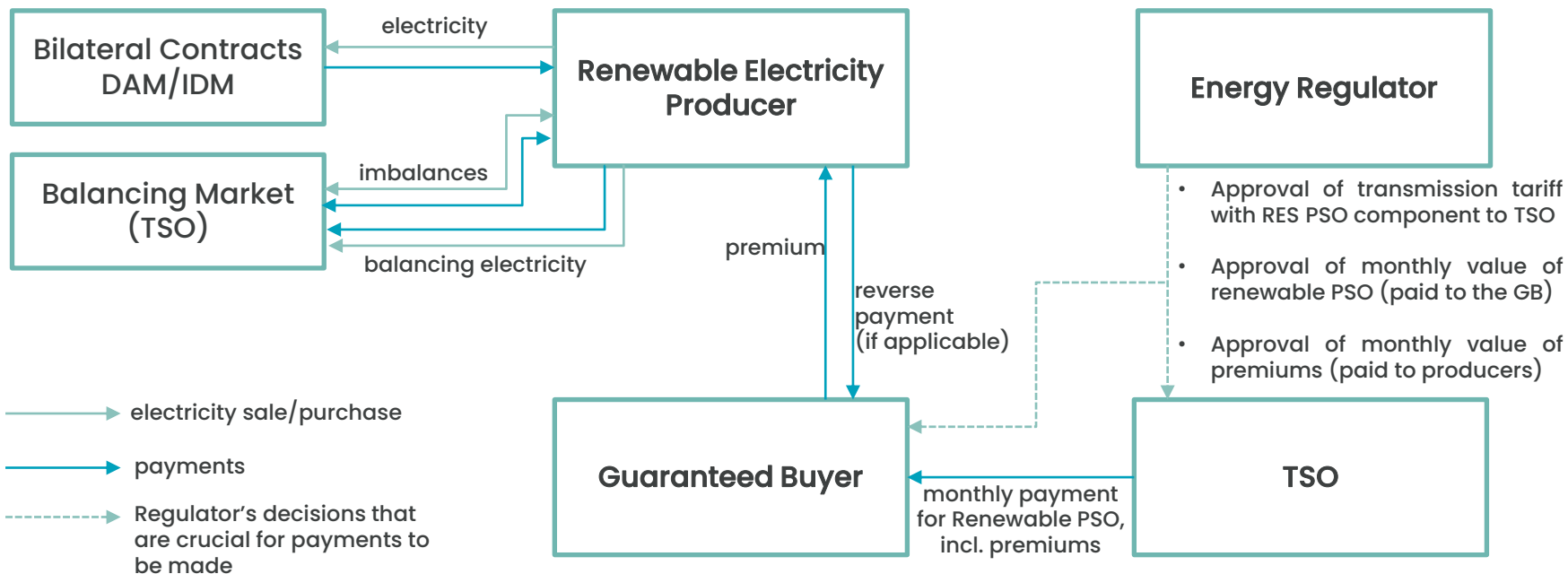


KEY RESTRICTIONS AND REQUIREMENTS APPLIED FOR PILOT RENEWABLE AUCTIONS (2/2)

<p>Limited period for power plant construction and commissioning</p>	<p>For solar project – 18 months* For other projects – 36 months* <i>*can be prolonged by 12 months with additional collateral: EUR 30,000 / 1 MW</i></p>
<p>Key indicators for CfD payment</p>	<ul style="list-style-type: none"> • Volume of electricity (MWh) sold via bilateral contracts, at DAM, IDM (exempting electricity used for own needs) • Auction price • Indicative price based on <ul style="list-style-type: none"> (i) weighted average baseload DAM price index (ii) weighted average price index for bilateral contracts (except contracts under PSO)
<p>Additional payments to Guaranteed Buyer</p>	<p>Contributions for GB’s arbitration fund*</p> <ul style="list-style-type: none"> • Rate of contribution subject to approval by the Energy Regulator • Not to exceed 1% of net income from electricity generation by relevant renewable power plant for previous year <p><i>*if a winner chooses dispute resolution in arbitration under ICC Arbitration Rules in Paris</i></p>
<p>Possible additional technical and/or market requirements (specified at Government discretion)</p>	<ul style="list-style-type: none"> • Priority regions where key projects need to be located • Suggested land plots, roofs, facades with technical parameters, and technical conditions for connection to the grid • Technical characteristics of BESS to be installed • Daily time intervals, profile when incentives will be applied • Share of an auction price to be fixed in EUR (not less than 50%)



SCHEME OF MARKET OPERATIONS FOR THE AUCTION WINNER



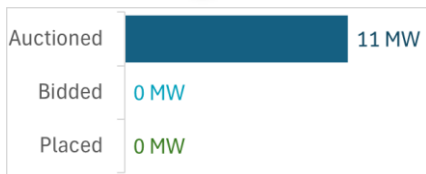


PILOT RENEWABLES AUCTIONS FAILED TO ATTRACT INTEREST

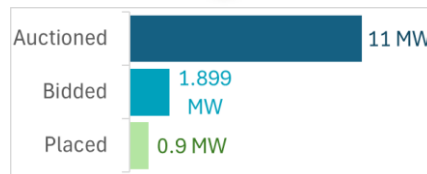
2024



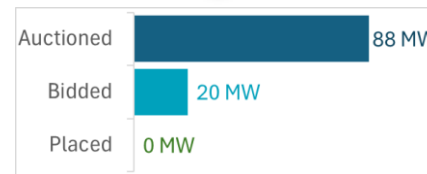
31 Oct
Solar



16 Nov
Bio-, small hydro



29 Nov
Wind



Location	Left bank of Dnipro river	Anywhere	Anywhere
Ceiling price	90 EUR/MWh	120 EUR/MWh	90 EUR/MWh
Auction price	n/a	111 EUR/MWh	n/a
Number of bidders	None	2 investors <i>both for small hydro</i>	1 investor
Number of winners	None	1 investor <i>small hydro</i>	None



WHY PILOT RENEWABLE AUCTIONS FAILED

- **Lack of Investor Confidence:** Renewable power plants financed and built under the FiT support mechanism faced retroactive changes of legislation in 2020, reduction of FiT rates, numerous changes of regulatory framework (no stability, no ability to forecast), and the Memorandum of Understanding signed as a result of the mediation was not honoured in full.
- **Debts and Non-payments:** Significant accumulated debt of the GB, the state-owned renewable electricity off-taker, to electricity producers with FiT and Feed-in Premium (FiP) contracts resulted in incomplete settlements with renewable operators to continue.
- **Lack of Reliable Financing Source:** FiT, FiP, and auction premiums are financed from the TSO transmission tariff which has historically been approved by the Energy Regulator at levels not sufficient to ensure full settlements. This standard 1-year tariff approval cycle does not bring confidence to investors.
- **Improper Integration of Investor Knowledge:** Investors' suggestions regarding auction design and procedure were not fully taken into account such as:
 - Limited quotas combined with limits for one beneficial owner;
 - CfD to be replaced with the FiP contract (envisaging no reverse payments by renewable producers to the GB when auction price is below the indicative market price), etc.

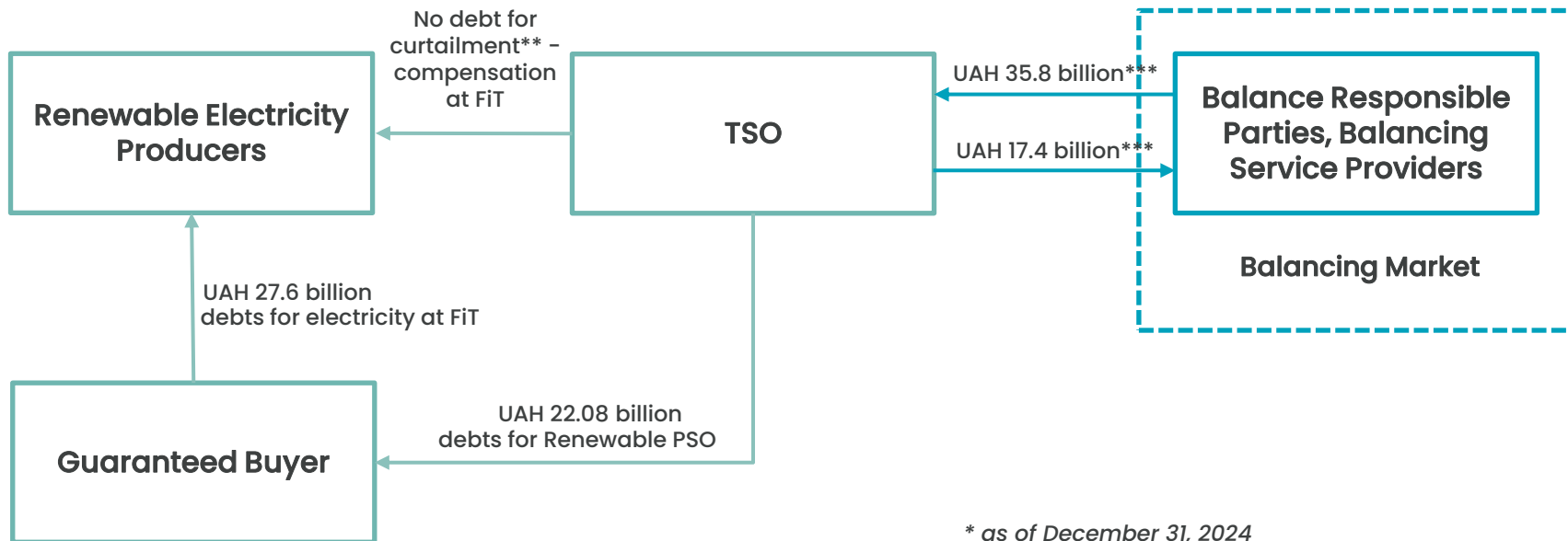


LACK OF INVESTOR CONFIDENCE DUE TO NON-STABLE REGULATORY FRAMEWORK

- At the end of 2024, the Energy Regulator supported proposals by USAID Energy Security Project on **restructuring of the RES financing scheme**. This involved **removing the RES surcharge from the TSO transmission tariff into a separate charge paid by market participants and end-consumers**. Reasons include:
 - Existing FiT incentive scheme has led to significant debts and is not efficient
 - Proposal is indicator of Ukraine Facility plan and recommendation of the Energy Community Secretariat
- Restructuring the RES financing system only updates the legal structure for the administration of the RES surcharge funds, but does not address the problems of the existing RES surcharge scheme as a TSO's transmission tariff component.
- **There is a risk that separation of RES surcharge from TSO transmission tariff may destabilize the payment flow to renewable operators relying on the state support.**
- Such approach to revising the incentive scheme “on the run” demonstrates a systematic instability of the regulatory framework that renewable investors have been facing.
- Investors faced major uncertainty during previous years due to multiple different imbalance calculation formulas applied to FiT renewables as part of the GB's balancing group.



DEBTS TO RENEWABLE ELECTRICITY PRODUCERS AT FIT*



* as of December 31, 2024

** TSO repaid debts for RES curtailment due to special purpose IFI's loans when debts for ancillary services were repaid as well. There is no reliable information about new debt accumulated

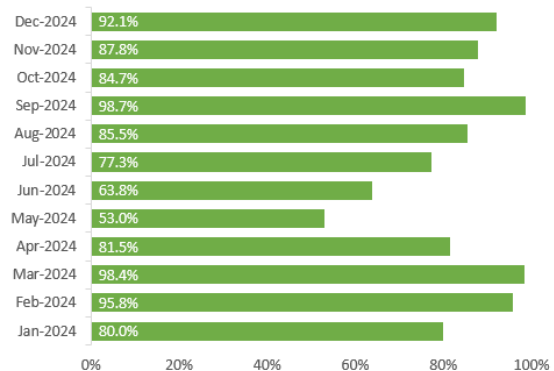
*** as of February 10, 2025

Sources: Guaranteed Buyer, TSO

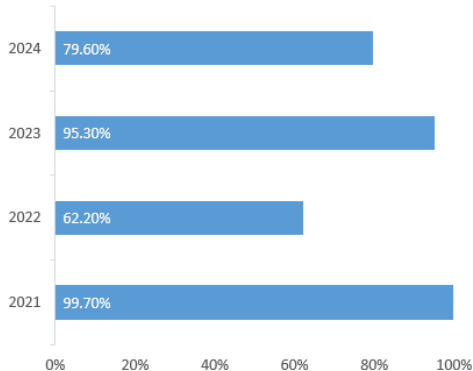


KEY CAUSES IN RISING DEBTS FOR FEED-IN TARIFF AND FEED-IN PREMIUM

FIT Payments for 2024



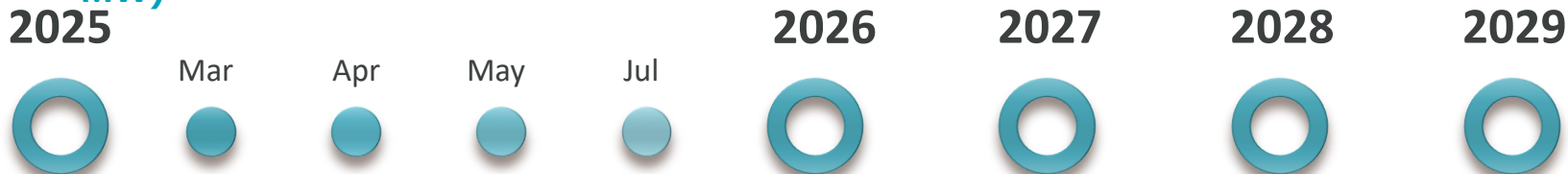
FIT Payments by Year



- As of 16 Jan 2024, TSO's debt to the GB for RES PSO amounted to UAH 22.08 billion
- First monthly FiP payments for 2024 made to renewable electricity producers at the end of 2024

- Historical lack of funds in the TSO transmission tariff from 2019–2024 caused incomplete settlements with renewable electricity producers (tariff is approved by the Energy Regulator)
- Inadequate regulator control over payments from the GB to renewable electricity producers
- Payments under Renewable PSO are lowest priority for TSO. No proportionality in payments had been applied.
- Complicated relations between the TSO and the GB in the calculation of monthly RES-surcharge value (submitted monthly for the Energy Regulator's approval): *10-month delay in the regulator's approval of RES surcharge value during 2024, while due date of final monthly payment to renewable electricity producers is linked to such approval*
- No responsibility of the state for delay of payments during martial law

GOVERNMENT APPROVED ANNUAL QUOTAS FOR NEXT RENEWABLE AUCTIONS (IN MW)



Year	2025	2026	2027	2028	2029
Solar*	33 Failed!	34	35	38	40
Wind	100	150	250	270	290
Biomass		21	25	25	26
Biogas		47	30	35	37
Small hydro		5	5	5	5

* In 2025, SPPs should be located at the left bank of Dnipro river.
In 2026- 2029, priority is provided for (i) SPPs located at the left bank of Dnipro river, (ii) SPPs equipped with BESS



HOW AUCTION QUOTAS REFLECT NEEDED GENERATION CAPACITY VS. TSO ESTIMATES

	Current Capacity, GW	TSO Target, GW	Total, GW	To be built		Investments Required, \$bn	Priorities
				Renewable Auctions* GW	% to total		
Solar	6.2	10.0	3.8	0.18	5%	2.1	New PV and wind power plants to replace destroyed thermal power plants
Wind	0.6	5.0	4.4	1.31	30%	7.5	
Biomass/ biogas	0	1.4	1.4	0.285	20%	1.5	
Energy storage	0	0.8	0.8	-	-	0.8	2-4 hours BESS
Hydro pumped storage	2.0	4.0	2.0	-	-	1.7	Construction/expansion of Kaniv and Dniester HPSPPs
Flexible gas generation	0.2	4.4	4.2	-	-	4.7	New flexible gas-fired capacities
Nuclear	7.8	10.2	2.4	-	-	20.0	Construction of two 1 GW nuclear power units and SMRs

* Total quotas for renewable auctions that the Government approved for the period of 2025-2029



NEXT STEPS WITH THE AUCTIONS

- **Small fine tuning of the renewable auction system is unlikely to significantly improve confidence and attract private investors in 2025** without addressing fundamental problems described above: non-payments under Renewable Public Service Obligation mechanism (FiT and FiP), Guaranteed Buyer's financial position, tariff design, etc.
- **Private investors require transition from current CfD structure to FiP mechanism** (e.g. one sided payments from the Guaranteed Buyer to investors when market price falls below auction price but without reverse payments when market price exceeds auction price).
- **World Bank proposal** to enhance payment guarantees under the auction scheme (refer to Annex slide B for details). Such payment de-risking mechanism would help to attract investors. However, without addressing systemic problems, the **Premium Support Fund** would continue payments to investors due to incomplete settlements with the auction winners.



OUR RECOMMENDATIONS

- **Avoid rushing 2025 renewable auctions**
- **Ukraine Government should engage with the World Bank to elaborate details of the Premium Support Fund as a possible de-risking tool. At the same time, it should address fundamental problems present in the Renewable PSO under the FiT framework**
- **Meanwhile, support should be given to mechanisms that can facilitate private sector investments until a sound state auction framework is in place (such as the Electricity Price Guarantee Fund suggested by renewable associations UWEA and EUEA)**



ANNEX



LEGAL FRAMEWORK APPLIED FOR RENEWABLE AUCTIONS

Laws

- **On Alternative Energy Sources**

Fundamentals for renewable auction procedure.

- **Electricity Market Law**

Specific of market operations for winners of renewable auctions.

Relevant provisions were originally adopted in April 2019 and revised further. The latest amendments were made in June 2023 by the Law on Green Transformation

Governmental and Ministry's decisions

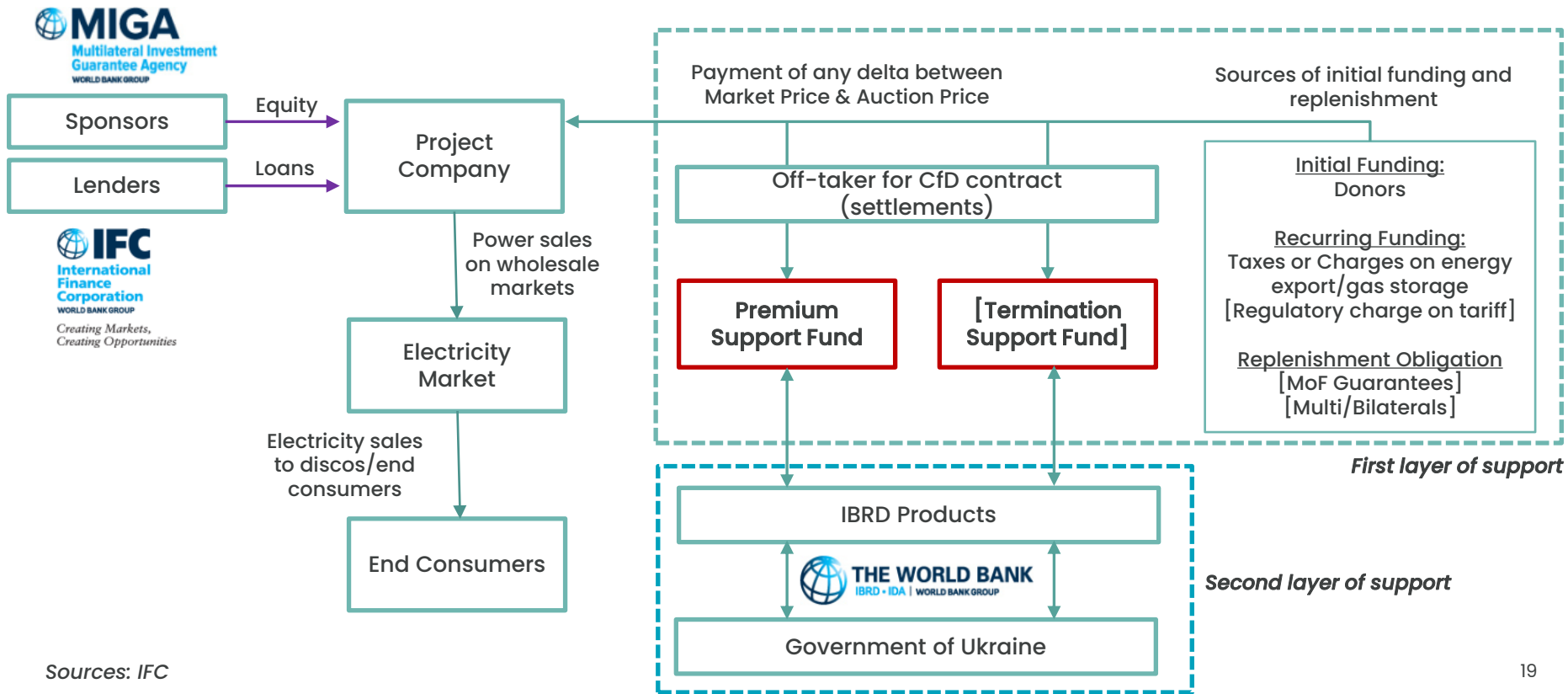
- Procedure for holding renewable auctions (*approved in 2019, amended in 2022 and 2024*)
- Procedure on selection of electronic platform operators for holding renewable auctions (*approved in 2019, amended in 2022 and 2024*)
- Standard contract on holding renewable auctions between customer of the auction and electronic platform operator (*approved in 2020, amended in 2024*)
- Auction quotas, schedule, ceiling prices for 2024 and 2025, auction quotas for 2026-2029 (*approved in 2024*)

Energy Regulator's decisions

- Procedure for (i) contractual arrangements between the Guaranteed Buyer and winner of renewable auction; (ii) calculation of payments (direct and reverse payments) to be made to/by a winner of renewable auction (*approved in 2019, amended in 2021, 2022, 2023, 2024*)
- Standard contract between the Guaranteed Buyer and winner of renewable auction (contract for difference) – *approved in 2024*



WORLD BANK'S IDEA OF THE PREMIUM SUPPORT FUND



Sources: IFC