

# WEBINAR SESSION

## TARIFF SUPPORT MECHANISM FOR RENEWABLE ENERGY (RE) PROJECTS

Synergy Consulting

# 0 DISCLAIMER

- *This presentation ("Presentation") has been prepared by Synergy Consulting Infrastructure and Financial Advisory Services Inc. ("Synergy") to provide helpful information on the subjects discussed for educational purpose only.*
- *Synergy will not regard any person (whether a recipient of this Presentation or not) as a Client and will not be responsible for providing any advice or protections to any such person.*
- *No representation or warranty, express or implied, is or will be given by Synergy or their respective directors, affiliates, partners, employees or advisors or any other person as to the accuracy, completeness or fairness of this Presentation and no responsibility or liability whatsoever is accepted for the accuracy or sufficiency thereof or for any errors, omissions or misstatements, negligent or otherwise, relating thereto.*
- *Synergy does not undertake, and is under no obligation, to provide any additional information, to update this file, to correct any inaccuracies or to remedy any errors or omissions in this Presentation.*
- *The Presentation should not be regarded as constituting an opinion on the situations discussed in the Presentation, nor relied upon as a basis to proceed, or not to proceed, with any specific action or remedy.*

# 1 ELECTRICITY MARKETS

## BRIEF ABOUT ELECTRICITY MARKETS

- There are two types of electricity markets: single offtaker Market and multiple offtaker Market. However, there can be hybrid markets which have characteristic of both the markets.

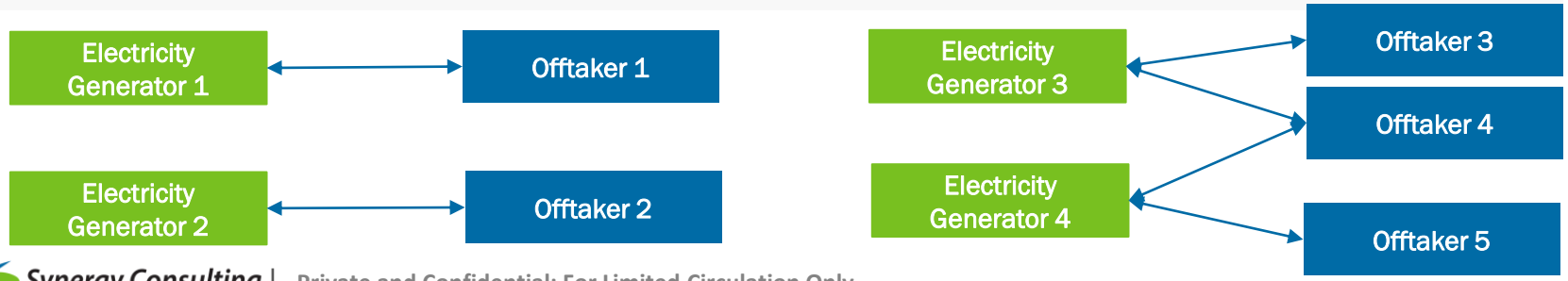
### Single Offtaker Markets

- In a single offtaker model, offtaker is usually a government body, and all electricity generators get into agreement with the government offtaker
- The single offtaker market is a monopolistic and regulated market with long term purchase agreements between offtaker and generators, typically 20 years to 25 years.




### Multiple Offtaker Markets

- In multiple offtaker model, electricity generators and producers are free to buy and sell electricity on a bilateral basis or in open markets.
- The multiple offtaker market is oligopoly market with market forces (demand & supply) determining the prices of electricity



1

# ELECTRICITY MARKETS

## BRIEF ABOUT ELECTRICITY MARKETS

- In a move to liberalize the electricity markets, countries are moving from a traditional monopoly (single offtaker model) to open access, and competitive markets (multiple offtaker market) where buy and sell can happen between electricity generators and electricity suppliers similar to traditional financial markets
- Since power cannot be stored commercially in large quantities yet, power trading is conducted using either short-term trades or long-term agreements, in which the power has yet to be produced
- Electricity is traded in different marketplaces. In general, the power delivery timeframe and the form of the transaction characterize how the marketplaces are defined.
- Depending upon how advanced the markets are, both Over The Counter (OTC) and Exchange trading can be present in the country just like the financial markets. Some of the contracts commonly available in these markets are as follows:

| | |
|---|---|
| Intraday | • Intraday power trading refers to continuous buying and selling of power in the market that takes place on the same day as the day of power delivery. |
| Day Ahead | • Power for the next day is traded on day-ahead auctions. Usually, power is traded for a dedicated hour or quarter-hour interval, but combinations of time intervals can also be traded as blocks. |
| Derivative Products | • Electricity is also traded on OTC or Exchange in the form of derivate products such as Futures and Options |

**Due to continuous reforms in electricity markets, governments have to evolve new support schemes such CFDs, FIT and FIPs which solve the dual purpose for developers and buyers for the certainty of tariff and incentivizing adopting renewable energy sources by providing an agreed support price**

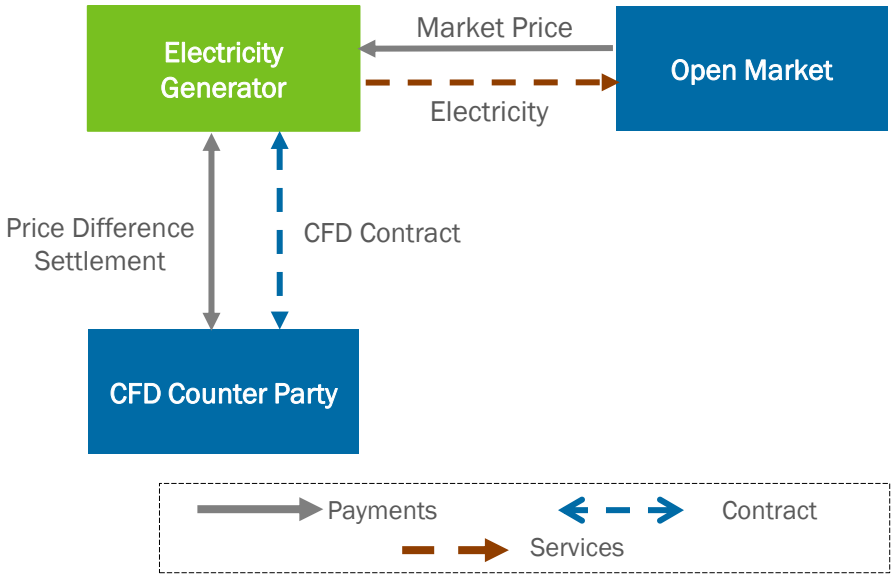
# 2.1 TARIFF SUPPORT SCHEMES

## CONTRACT FOR DIFFERENCE (CFD)

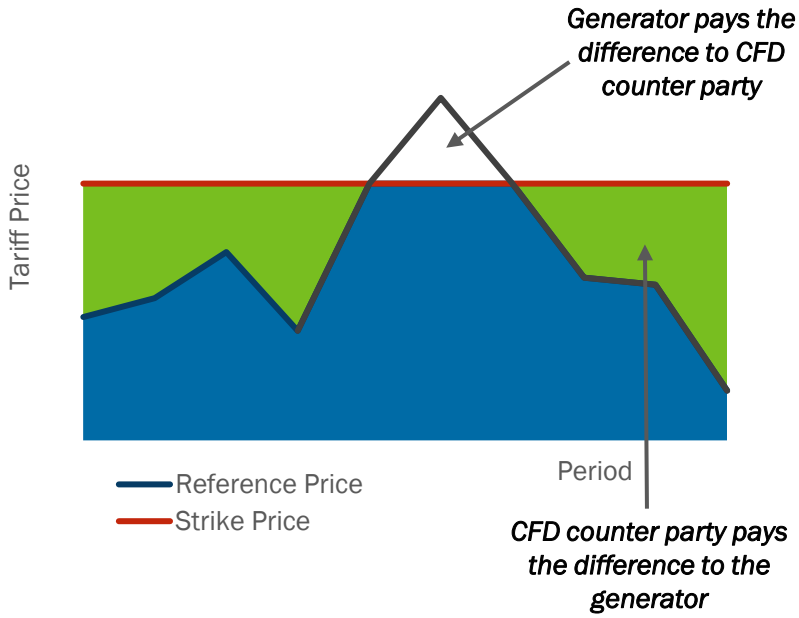
### DESCRIPTION

- CFD is a long-term contract between an electricity generator and a CFD counterparty (which is the government in some cases). The contract provides certainty to the electricity generator's cash flows for the duration of the contract.
- Under the CFDs, when the market price for electricity generated by a CFD generator (the reference price) is below the Strike Price set out in the contract, payments are made by the CFD counterparty to the CFD generator to make up the difference. However, when the reference price is above the Strike Price, the CFD Generator pays CFD counterparty the difference.
- CFD is majorly used in mature markets such as the UK, US, Europe, Latin America etc.

### CONTRACTUAL STRUCTURE




### GRAPHICAL REPRESENTATION



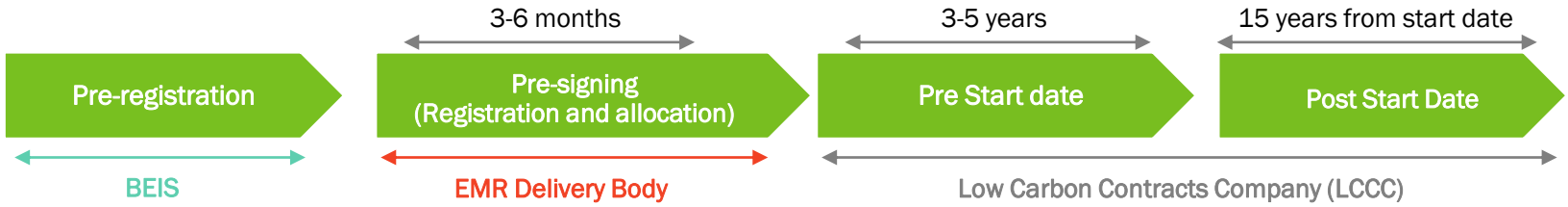
2.2

# TARIFF SUPPORT SCHEMES

## CONTRACT FOR DIFFERENCE (CFD) CASE STUDY – UK

- In the UK, CFD was introduced as part of Energy Market Reform (EMR) in 2012, targeted to provide increased revenue certainty to developers using renewable energy sources
- The government intended to allocate CFDs to a broad range of renewable technologies. This allocation was initially planned to take the form of the administrative process for renewables with strike price being set by the government body but later move towards competitive forms of auctions
- Renewable generators located in the UK that meet the eligibility requirements can apply for a CFD by submitting a sealed bid and successful developers enter into a contract with the Low Carbon Contracts Company (LCCC)

### CFD ALLOCATION STAGES




| | |
|---|---|
| Business, Energy and Industrial Strategy (BEIS) | • Sets the policy and governance arrangement for the scheme, including the allocation process, timing and budgets of allocation rounds and administrative strike prices |
| EMR Delivery Body | • Responsible for running the allocation process from initial registration, CFD applications and assessing the eligibility of applications |
| LCCC | • Manages CFDs throughout their lifetime including through various milestones during the project delivery phase, makes CFD payments during the operation phase |

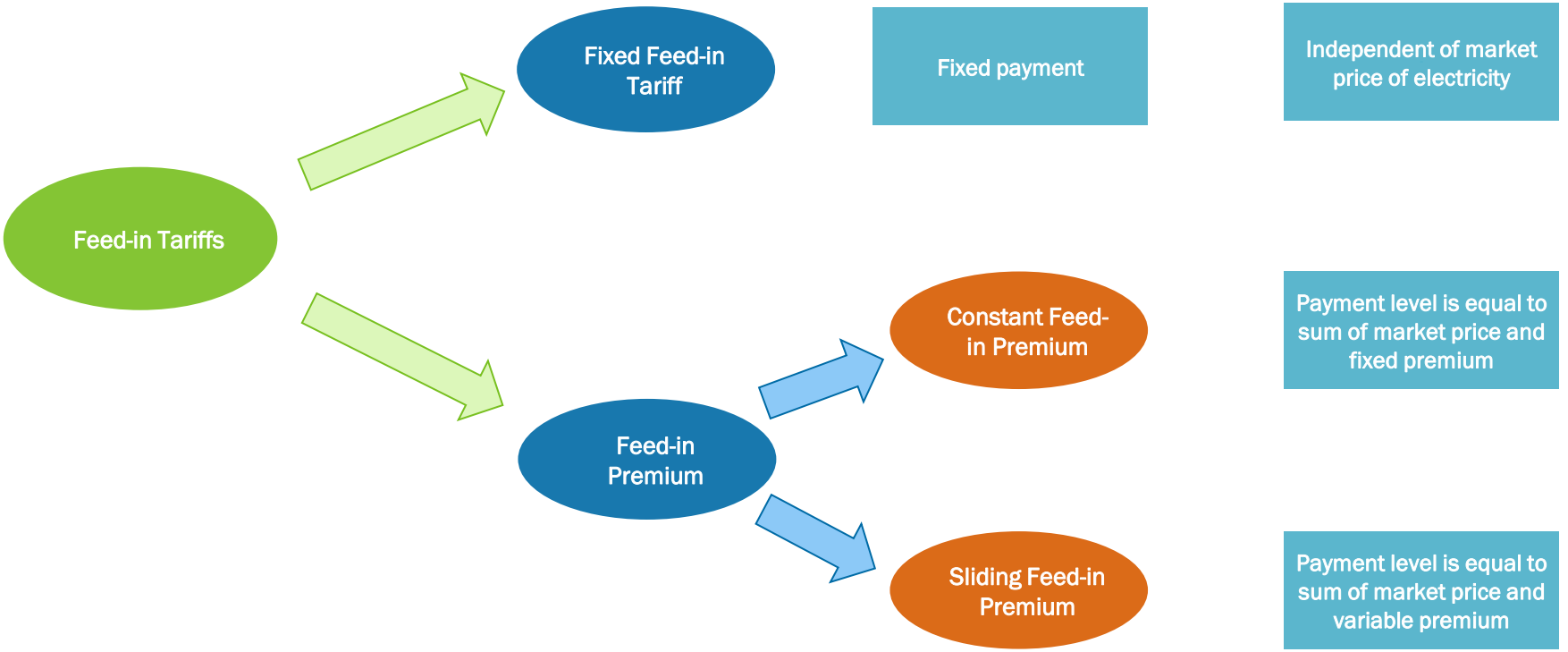
- There have been three CFD allocation rounds till date (2015, 2017 & 2019) and fourth allocation round is planned to open by 2021.

# 2.3 TARIFF SUPPORT SCHEMES

## FEED IN TARIFF

### INTRODUCTION

- Feed-in tariffs (FITs) are the most commonly used methodology by Government to procure renewable energy during initial stages of renewable energy adoption
- FIT policies are divided into two:
  - Fixed FIT: Independent of the market price of electricity
  - Feed-in Premium (FIP): Dependent on the market price for electricity.



# 2.3 TARIFF SUPPORT SCHEMES

## FIXED FEED IN TARIFF

### CHARACTERISTICS OF FIXED FEED IN TARIFF

- Payment level remains independent from the market price, and the project company receives fixed payments throughout the concession term.
- Certainty in the project company's cash flows enhances the bankability of the project and might lead to a decrease in financing costs.
- Government undertakes FIT route to promote different goals, such as:
  - Promotion of specific technology (wind, solar, biomass etc.)
  - Size of the project (over or under a certain capacity)
  - Location of the project (onshore/offshore, interconnected/non-interconnected system).

### ADVANTAGES

- Higher transparency and stability of revenues reduces investor risk and encourages new technologies.
- Payments are more closely related to actual costs of RES generation.
- FIT is relatively simple and easy to implement and understand for offtaker

### DISADVANTAGES

- The FIT levels are usually set at a higher level to attract investors and government tend to overcompensate the investors in comparison if the plant was procured through the bid process.
- FIT does not provide any incentive for electricity generators to respond to price changes in the electricity market

*FIT schemes are very effective in stimulating rapid and large scale adoption of a renewable energy program for a country/region. FIT has seen huge success in Europe, Egypt, Kazakhstan, Kenya etc.*

2.4

# TARIFF SUPPORT SCHEMES

## FIXED FEED IN TARIFF (FIT) CASE STUDY– JORDAN ROUND 1

The 117 MW Tafilah wind farm became the first privately financed, commercial scale renewable project implemented in Jordan. As such, Tafilah served as a model to further refine and optimize the proposal process and regulatory regime leading to Round 1 of the Renewable Energy Program. IFC assisted NEPCO to implement the regulatory and legal reforms necessary to ensure best practices and the overall bankability of the projects.

### SALIENT FEATURES

- Fixed feed-in tariff set at 16.9 USc/kWh to encourage participation; 12 direct proposals totaling 201MW were approved

### KEY CHALLENGES

- Individual projects were small, between 10 to 20 MW, and thus would have resulted in high transaction costs and long timelines to develop the aggregate capacity
- Consortiums include international and local companies that were new to the industry or region, or lacked international project finance experience

### MITIGATION STRATEGIES

- IFC provided a common financing program for 7 of the projects, with IFC acting as the common mandated lead arranger to simplify the process
- Collective negotiation allowed the developers to receive better pricing from their suppliers

### LENDERS PARTICIPATION

IFC International Finance Corporation WORLD BANK GROUP; DFID THE UK FUND FOR INTERNATIONAL DEVELOPMENT; ARAB BANK البنك العربي; EuropeArabBank; FMO Entrepreneurial Development Bank; Standard Chartered; European Bank for Reconstruction and Development; NEXI Nippon Export and Investment Insurance; Proparco GROUPE AGENCE FRANÇAISE DE DÉVELOPPEMENT; MIZUHO; FINNFUND; JBIC

*Success of Round 1 FIT scheme resulted in a competitive tender process being chosen for Round 2 projects*

2.5

# TARIFF SUPPORT SCHEMES

## FIXED FEED IN TARIFF (FIT) CASE STUDY – EGYPT

- The renewable energy Feed-in-Tariff (FiT) scheme was announced by the Ministry of Energy and Renewable Energy (MOERE) in September 2014 as a measure to achieve the targeted 20% new and renewable energy by 2022
- Under the FIT program, the MOERE aimed to procure **2.3GW of Solar PV** capacity and **2 GW of wind** capacity in Egypt
- For the solar PV projects with capacity from 20 MW to 50 MW, a tariff of **USD 14.34 cents/kWh** was fixed for FIT Round 1 and subsequently **USD 8.40 cents/kWh** for FIT Round 2
- Egypt had released a shortlist of **110 qualified applicants** for solar PV and wind projects for the FIT Round 1
- After two rounds of FIT, Egypt was successful in procuring more than **1500 MW of renewable energy**. A total of **33 projects** reached Financial Close and saw participation from international lenders
- The two rounds of FIT mandated the developers to achieve the Financial Closure by set date with a full project finance structure to qualify for the FiT scheme
- Recently Egypt launched a FiT scheme for waste-to-energy (WTE) by inviting EOIs for projects of no more than 20MW each

### LENDERS PARTICIPATION

IFC International Finance Corporation · EuropeArabBank · CDC · Proparco · European Bank for Reconstruction and Development · Bayern LB · FINNFUND · FMO · IsDB Islamic Development Bank · AIIB · ICBC · African Development Bank · Green Climate · OeEB

*FIT schemes were effective in stimulating rapid and large scale adoption of renewable energy program in Egypt.*

2.6

# TARIFF SUPPORT SCHEMES

## FEED IN PREMIUM (FIP)

### CHARACTERISTICS OF FEED IN PREMIUM

- In FIP scheme electricity from generators is sold on a price based on a premium offered above the market price for electricity
- This premium can either be constant, or it can vary based on a sliding scale.
- Fixed FIP are easy to understand and implement, but generators can enjoy high rewards when market prices of electricity increase, but also run a corresponding risk when the price decrease
- In order to avoid risk of large divergence between profits and losses for fixed FIP, it can be designed with payment caps and/or floors.

### ADVANTAGES

- FIP provides an incentive to generators for respond to price changes in the electricity market
- They provide a better methodology for electricity supply to adjust with demand.

### DISADVANTAGES

- FIP is not much suitable for RES such as wind and power as they cannot adjust to market signals by increasing their supply
- Greater investor risks as the project company's cash flows are not fixed; this might impact the bankability of the project as well.

*FIP schemes were introduced in Europe as an enhancement to existing FIT schemes. FIP schemes are currently used by the Czech Republic, Denmark, Germany, Italy and other European countries.*

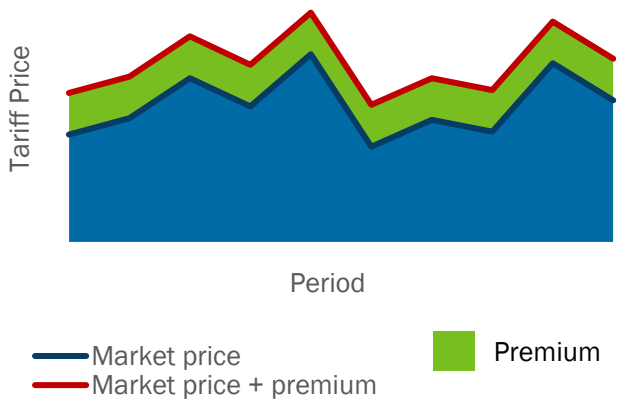
2.6

# TARIFF SUPPORT SCHEMES

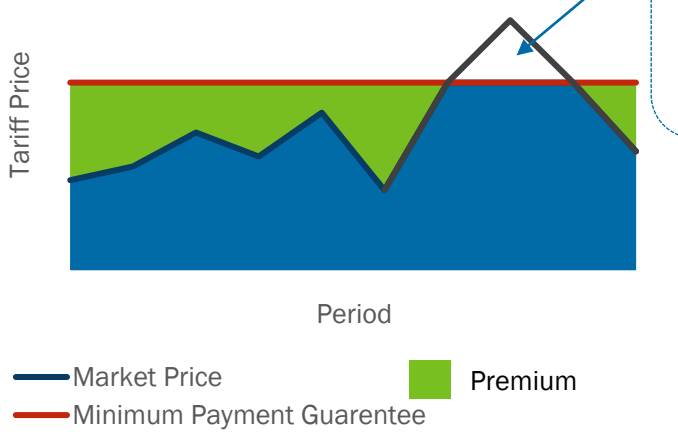
## TYPES OF FEED IN PREMIUM (FIP)

| Constant Feed-in Premium (Market price + fixed premium) | Sliding Feed-in Premium (The higher the market price, the lower the premium) |
|---|---|
| • High market price ⟶ high payment levels | • The risk of overcompensation is decreased. |
| • Low market price ⟶ low payment levels [=risks on project profitability] | • The introduction of caps and floors can minimize both the upside and the downside risks |
| • The level of the premium is independent of the market price. | • Greater certainty for the State's FIT costs and for the investor's profits |

### Constant Feed-in Premium




### Sliding Feed-in Premium




When spot market price is greater than MPG, the premium becomes zero. In this case, the generator typically receives spot market price

2.7

# TARIFF SUPPORT SCHEMES

## FEED IN PREMIUM (FIP) CASE STUDY – GERMANY

### GERMANY – TARIFF SUPPORT SCHEMES

- Renewable energy in Germany is supported under German Renewable Energy Sources Act (EEG). Initially, statutory feed-in tariffs were paid to the developers.
- Following the reform of EEG in 2014, Market Premium has become the main support scheme for electricity from renewable energy sources. Installations have to sell the electricity and can receive additional support as a 'market premium', namely the difference between the market price and an 'applicable value' under the EEG.
- Following the amendment of the EEG in 2017, the market premium for most technologies has to be determined through a market-oriented procedure - a tender. Since the tender only applies for projects of a certain size, there are still remaining new projects entitled of a classical market premium.




### MARKET PREMIUM - METHODOLOGY

- Calculated as difference between a fixed feed-in and the monthly market value of electricity sold. The plant operator has to sell his electricity and claim market premium from grid operator.
- The amount of the market premium is calculated every calendar month. The reference tariff, legally defined for each technology, is subtracted with the monthly electricity value. The costs of the premium tariff scheme are borne by the end consumers.

### RECENT FINANCING

- German environment-friendly lending institution Umwelt AG will provide a EUR 55 million loan for the Anumar's 110 MW Schornhof solar park. PPA term for the project is 11 years.
- The agreement deals with 50 MW of the capacity amounting to €60 million. The developer is under negotiations to contract the sale of power for a further 30 MW capacity and has been already awarded a feed-in premium contract for another 30 MW. (*July 2020*)

UmweltBank
Mein Geld macht grün.

Anumar

# Thank You