Power Purchase Agreement for Commercial PV Systems

Dr. Özlem Döğerlioğlu IŞIKSUNGUR Managing Partner

ozlem@dogerlihukuk.com





Döğerlioğlu Law Firm









CONTENT OF THE PRESENTATION



Solar Energy Generation in Turkey: Licenced & Unlicenced

Third Party Financing: PPA

Benefits and Potential Issues



NEW ERA IN TURKISH **ELECTRICITY MARKET**



New Legislation > New Market > New Opportunities / New Risks





SOLAR ENERGY GENERATION **IN TURKEY-** Legislation



Licensed Generation

- **License Regulation**
- Communication for Wind and **Solar Energy Measurements**
- Communication related to Competition

Unlicensed Generation

- **Unlicensed Regulation**
- Communication on

Implementation of the Regulation related with Unlicensed Electricity **Generation in Electricity Market**

- > Electricity Market Law (6446)
- >Law on Utilization of Renewable Energy for the Sources **Purpose of Generating Electrical Energy**
- **≻**Regulation **Documentation &** Promotion of the Use of **Renewable Energy Sources for Electricity** Generation







Magnetism of the Turkish Solar Market

- Solar Energy based Electricity Generation Systems:
 - Announced Limit for Licensed Project: 600 MW total installed capacity until the end of 2013
 - ~ 1.700 MW expected application
 - > ~ 9.000 MW application
- Regional Developmet Agencies's Support
 - Example: IZKA (İzmir Developmet Agency)
 - Renewable Energy and Environment Technologies Financial Support Programme (2012)
 - Support Limits: (min.)100.000 1.000.000 (max.) Turkish Liras
 - Applications for Unlicensed Solar Projects
 - Total approved Renewable Energy Projects: 41
 - ➤ Total approved Solar Projects: 24 => more than ½

Don't you want to take a place in this Market?





FINANCING OF PROJECT

INCENTIVES

MEASUREMENT

SHARE TRANSFER

TRADING OF ELECTRICITY

PROCEDURE

Y COLAD ENERGY CENERATION



> Possibility of Selling Surplus Energy

> No Need of Obtaining a License and

> Domestic Product Contribution

> Any Real or Legal Person

Establishing a Company

Transfer of Generation Facility

> No Competition

(Article-29)

Forbidden

No Need

IN TURKEY		
	LICENSED	UNLICENSED
APPLICATION PERIOD	Only on the Date Announced by EMRA	No Restriction about Application Date
BUREAUCRACY	≥ 25 Institution	≤ 10 Institution
CAPACITY	No Capacity Limit	Up to 1 Megawatt ➤ Council of Minister Decision ➤ Without Selling to the Sytem Unlimited Capacity
EXPROPRIATION	Possible	Not Possible

> Purchasing Guarantee of State

> Domestic Product Contribution

➤ Limited Liability or Joint Stock

> Minimum Capital Requirement

> Pre-License/ License Requirement

Forbidden (directly/indirectly) for the

Compulsory

Company

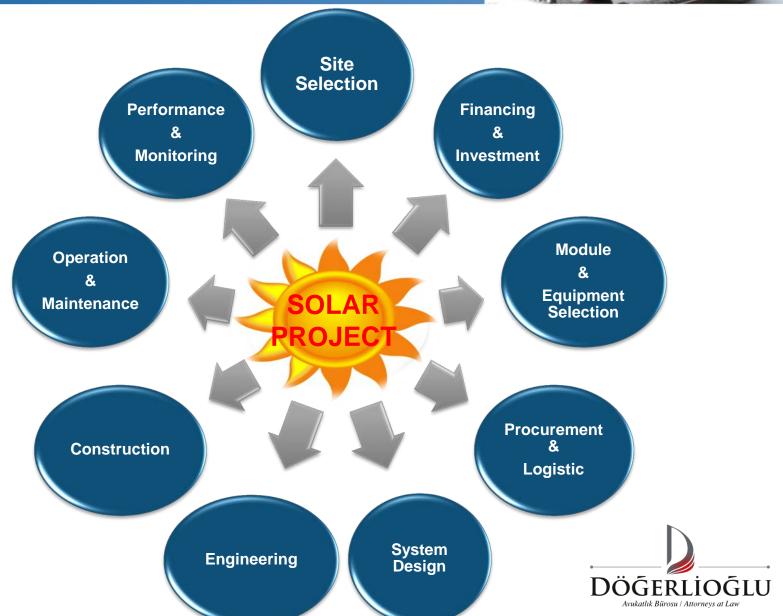
> Competition

Pre-License

Possible

STAGES FOR UNLICENSED PROJECTS

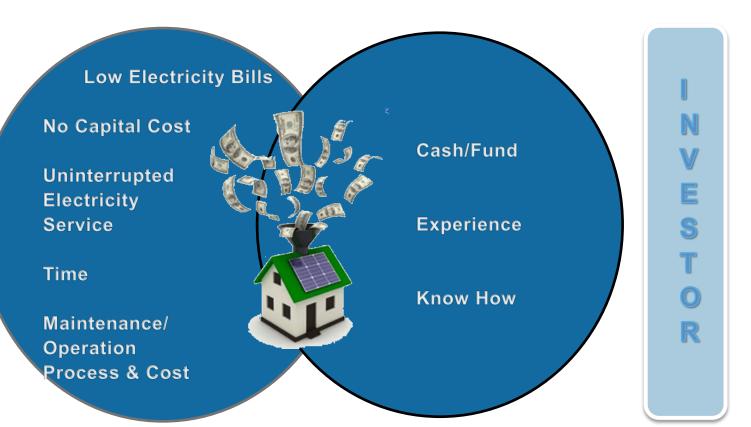




EXPECTATIONS OF THE PARTIES



R



The Issue of Financing?



HOW UNLICENSED PROJECTS CAN BE FINANCED?



*Private Banks and Funds

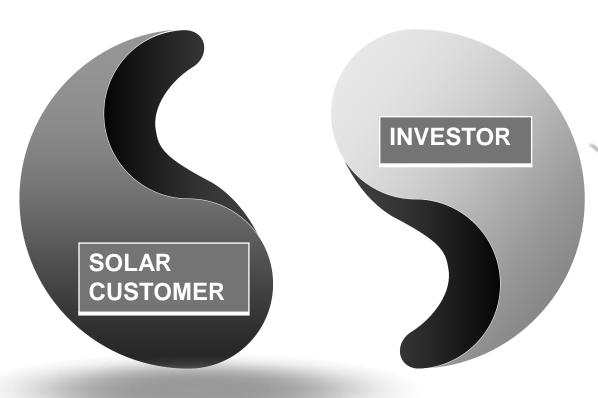
Reluctance of Turkish Banks for the Finance of Unlicensed Projects

- *Own Capital
- *PV Manufacturer
- *Investor



MOTIVATION FOR COOPERATION





Is PPA an Option for **Unlicensed Projects?**



THIRD PARTY FINANCING (Common Types)

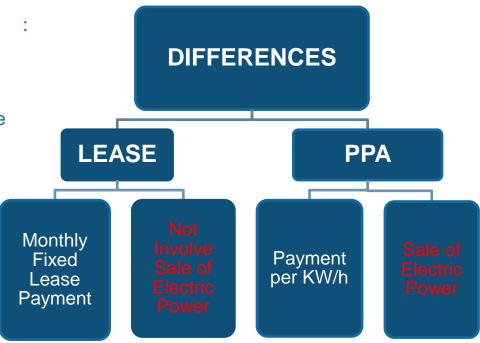


Solar Lease & PPA

- ➤ Alternative financing option
- ➤ Little or no upfront capital investment
- **Parties:**
 - Host (customer)
 Location (unused rooftop, land, parking space as location)
 - ➤ Third Party (developer):

Design, *permitting?*, financing, installation, operation & maintanence, monitoring

➤ Duration: 15 - 20 years





kWh output

POWER PURCHASE AGREEMENT

6-20 Years

SPPA

Revenue

Electricity

From

Sales



UTILITY ➤ Continues providing regular electricity services >Provides PV interconnection to arid >Provides net metering credit to Host customer in areas where net

service

metering is available Regular kWh Excess PV

HOST

- ➤ Receives power from on-site PV system
- >Option to purchase associated **RECs**
- > Provides installation space and service access for PV system but doesn't own array

Revenue from Electricity Sales

SPECIAL PURPOSE ENTITY

- > Receives payments from sale of PV's electric output
- >Legal entity to distribute tax benefits, depreciation, ownership, leasing between and Solar Services Provider and Investors
- > Host customer signs SPPA contract with special purpose entity

Equipment & Warranties

SOLAR SERVICES PROVIDER

- Coordinates financing. design, and construction of PV system at Host's side
- ➤ Processes all incentives
- ➤ Monitors PV system performance
- ➤ May sell PV system's associated REC's
- ➤May sell replacement RECs not sourced from on-site solar to Host

EQUIPMENT MANUFACTURER

- >Receives revenue from sale of system components
- >Provides equipment warranties

INSTALLER

- >May be owned/operated by Solar Services Provider
- > Designed and installs PV Project on behalf of Solar Services Provider
- ➤ May provide maintenance servicing for PV system under contract with special purpose entity

M&O Revenue

Maintenance

Servicing

Equipment

Sales

INVESTOR

- > Receives low risk ROI from sale of
- > Provides capital and owns system for
- >Lender contributes financing

www.epa.gov



Contract Party

Legal Entity and Contract Party

BENEFITS OF PPA



- > No initial capital investment
- Only pay for generated solar electricity
- Benefit from clean energy
 - > Reduced carbon emissions
 - Carbon credits
- Protection against volatile electricity prices
- > Reduces electriity bills
- No responsibility for system operation & maintenance
- Selling to the system
- > 3 options at the end of the agreement term:
 - 1. Purchase the system at a reduced price
 - 2. Initiate another PPA
 - 3. Have the system removed







POTENTIAL ISSUES FOR PPA



Lack of Harmonization among Legislations

- The Issue of Ownership
- Status of Roof (Transfer of Generation Facility)

Legal Restrictions

- Land Issue
- Trading of Electricity
- Lack of Legal Regulation of Financial Mechanism

Other Points

- Guarantees
- Performance Bond Insurance
- Solar Developers' Leave of the Site after 5-10 Years
- The Loss of Energy Savings from a PPA
- Land will be Tied Up and Unable to be Used for Other Purposes



NEW LEGISLATION ON UNLICENSED GENERATION



- Article 5 of Regulation- «Exemption from Obtaining License and Establishing Company (Renewable Energy Resources)»
 - ➤ 1 MW installed capacity for each consumption facility Not for real/legal person
 - Adequate capacity within the distribution system multiple (more than one) renewable energy based generation facility for ONLY 1 consumption facility
 - > 1 MW X 5 with the decision of the Council of Ministers
 - Consumption facility may be connected to the (distribution or transmission) system with the generation facility simultaneously
 - Previous legislation
 - > Benefit: Opportunity for new subscribers
 - **>** BUT!!!
 - ➤ No limitation capacity:
 - Generation facilities consuming all of the generated energy without giving to transmission/distribution system
 - Having both generation and consumption at the same measurement point





RISE IN CAPACITY LIMIT: ALTERNATIVES???



Option 1















Consumption Facility

1 MW Generation Facility

Distribution/Transmission System

Surplus Energy

Option 2















Consumption Facility

(X) KW/Solar + (Y) KW/ Wind + (Z)KW/ Hydro = 1000 KW

Distribution/Transmission System

Surplus Energy

Option 3



Consumption Facility



No Limitation
Same Measurement Point



No Connection





CONSUMPTION MERGE



Same Tariff Group

- Residential
- Industrial
- Commercial

Financing Issue

Combination of Smale Scale **Projects**



Same Connection Port

> **Single** Common Meter



Opportunity to Purchase **Favourable** Price **Electricity**

Capacity Limit

Exception for Organized Industrial Zone

One/Multiple Real and/or **Legal Person**

Seperate Production Facility/Facilities for each **Participant**

An **Authorized** Person among from **Participants**







New Legislation > New Market > New Era: NEW OPPORTUNITIES / NEW RISKS

Capacity Limit: up to 1 MW - Exceptions

Main Issue for Solar Customer / Main Opportunity for Investor: FINANCING

Model for Financing: PPA

Benefits of PPA

Customer: Affordable Price for Own Electrcity

> Investor : Profit

> Turkey : Increasing Share of Renewables

Barriers Before PPA: NEW MODEL & SHORTAGE OF LEGISLATION & TRADE OF ELECTRICITY

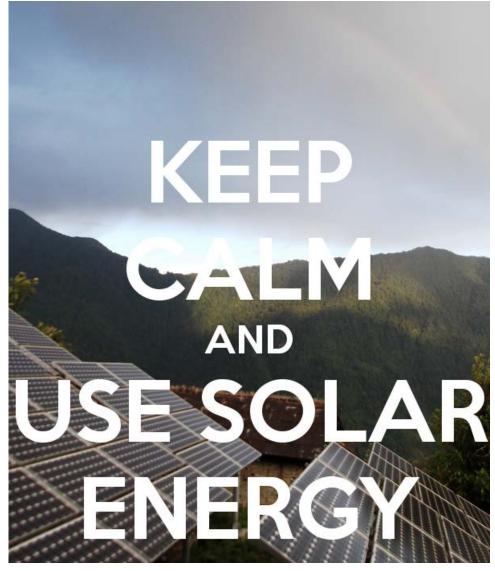






WE BELIEVE that "The sun will be the fuel of the future"













1476 Sok. No:2 K:8 D:13 Aksoy Plaza 35220 Alsancak - İzmir

T:+90 232 4830917 / +90 232 4895118 **F**: +90 232 4895219

E-mail: dogerli@dogerlihukuk.com **Web**: www.dogerlihukuk.com

