

Enablers for Renewable Energy in the Kingdom of Saudi Arabia

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Overview on the most notable initiatives of the electricity sector integration ecosystem



Restructuring the
Electricity Sector



Energy mix for
electricity generation



Exporting Electrical
Power



Smart Meters



Removing liquid fuel
(utilities and auto-
generation)



Developing polices
and regulatory
frameworks for
renewables

Projects and Participations

Automation and digitization of the Electricity Sector, including smart meters project

Fulfilling environmental requirements within the Electricity Sector

Participating in the application of the Saudi Building Code

Developing the electricity sector policies and optimizing the energy mix to produce electricity

Removing liquid fuel from power generation

Developing regulatory frameworks for renewables

Enabling the infrastructure of the Electric vehicle charging stations

Electricity Interconnection Projects

- The electrical grid system interconnection between the GCC states
- Developing studies and policies related to cross-border electricity trade
- The Saudi-Egyptian electricity interconnection
- The Saudi-Jordanian electricity interconnection
- The Saudi-Iraqi electricity interconnection

Objectives of The Regulations



Defining provisions for Renewable Energy Generation (REG) Systems for Self-Consumption



Setting up the regulatory requirements and the financial schemes related to grid connected systems



Establishing the necessary framework for billing arrangements of surplus energy export.



Safe construction, installation, maintenance and operation of renewable systems.

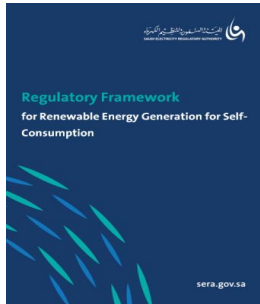


Provide protection to the consumers, and raising awareness.

Regulations for Renewable Energy Generation

1

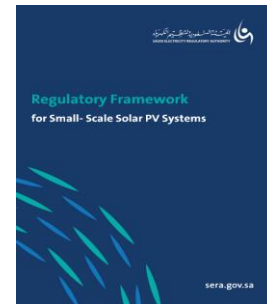
Regulatory Framework for Small-Scale Solar PV Systems



Capacity < 2MW

2

Regulatory Framework for Generation for Self-Consumption Renewable Energy Consumption



Capacity < 30MW

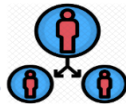


Other Tech. < 30MW



Regulatory frameworks applies to:

Eligible consumers



Service providers



مرافق
MARAFIQ

spark
مدينة الملك سلمان للطاقة
King Salman Energy Park

Any entity involved in the REG
(Consultant/contractor)



1

Regulatory Framework for Small-Scale Solar PV Systems



ERRA Energy Transition Committee meeting

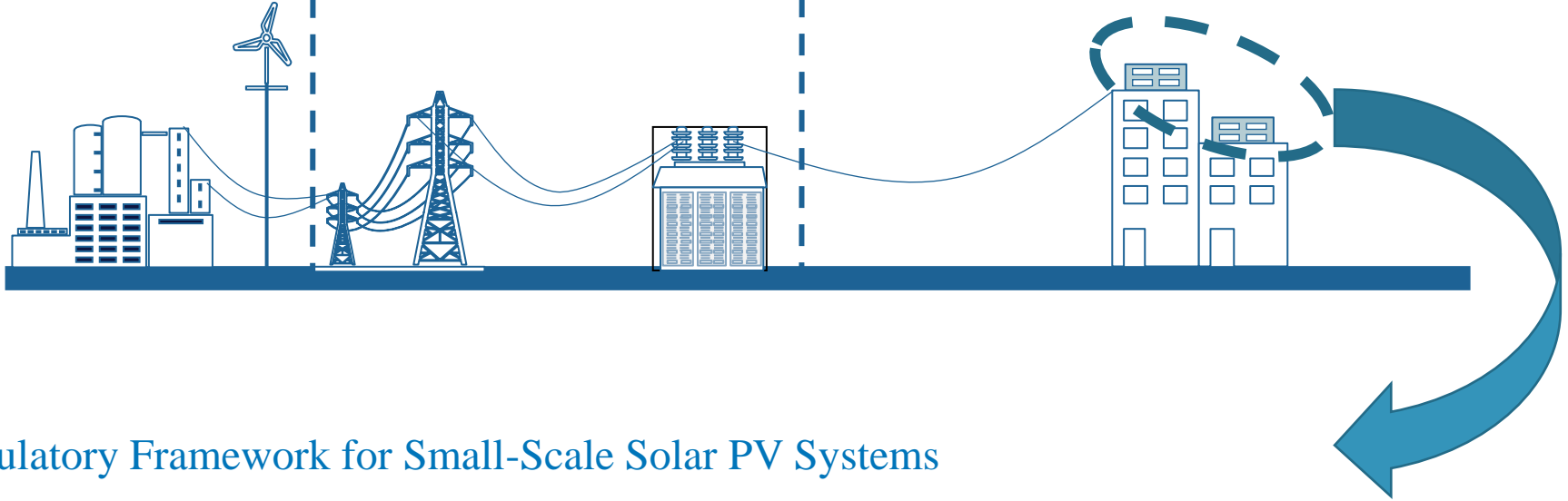
November 7, 2024 / Istanbul, Türkiye

Regulatory Framework for Small-Scale Solar PV Systems

Generation Station

Transmission Network

Distribution Network



Regulatory Framework for Small-Scale Solar PV Systems

Any photovoltaic (PV) solar energy system with a capacity not exceeding (2) megawatts and connected to the distribution network for the purpose of self-consumption

Roles and Responsibilities

وزارة البلديات والإسكان
Ministry of Municipalities and Housing



Building Inspection
and Accreditation
Requirements

الهيئة السعودية للمواصفات والمقاييس والجودة
Saudi Standards, Metrology and Quality Org.



Technical Regulations
and conformity
assessment

وزارة الطاقة
MINISTRY OF ENERGY



Qualification
Committee

Certification and
Qualification
(Contractors and
Consultants)

الهيئة العامة لتنظيم قطاع الكهرباء
SAUDI ELECTRICITY REGULATORY AUTHORITY



Regulatory
Framework

الشركة السعودية للكهرباء
Saudi Electricity Company
Empowering Energy



Operation and
maintenance
standards

الشركة السعودية للكهرباء
Saudi Electricity Company
Empowering Energy

Technical
requirements and
inspection

مدينة الملك عبد الله للطاقة
الذرية والمتجددة KA-CARE



Solar training
certificates

Important Elements of the Regulatory Framework

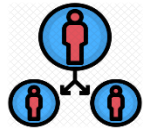
This regulatory framework applies to:



الشركة السعودية للكهرباء
Saudi Electricity Company



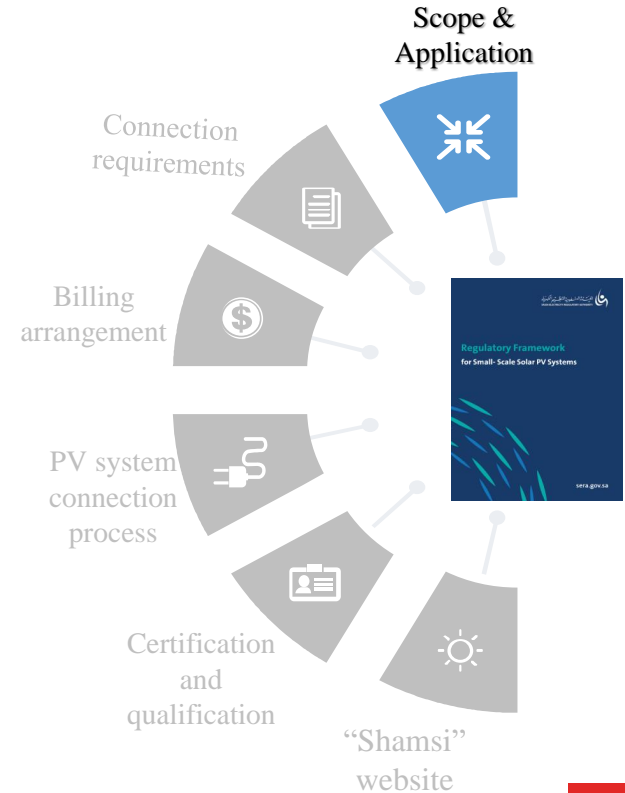
Distribution Service Provider



Eligible consumers



Certified Consultant/Contractor
and any other persons involved in
the connection of the PV system



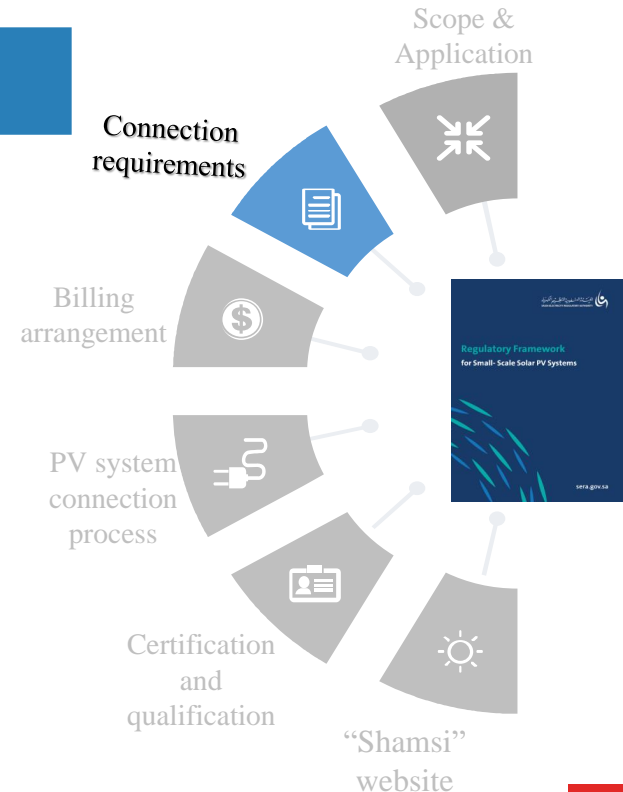
Important Elements of the Regulatory Framework

Small-scale solar PV system installation requirements

- The installation location must be at the consumer's premises
- Must not exceed (2) Megawatts and not less than (1) kilowatts
- Safety compliance with the distribution system

Capacity of a single small-scale solar PV System project

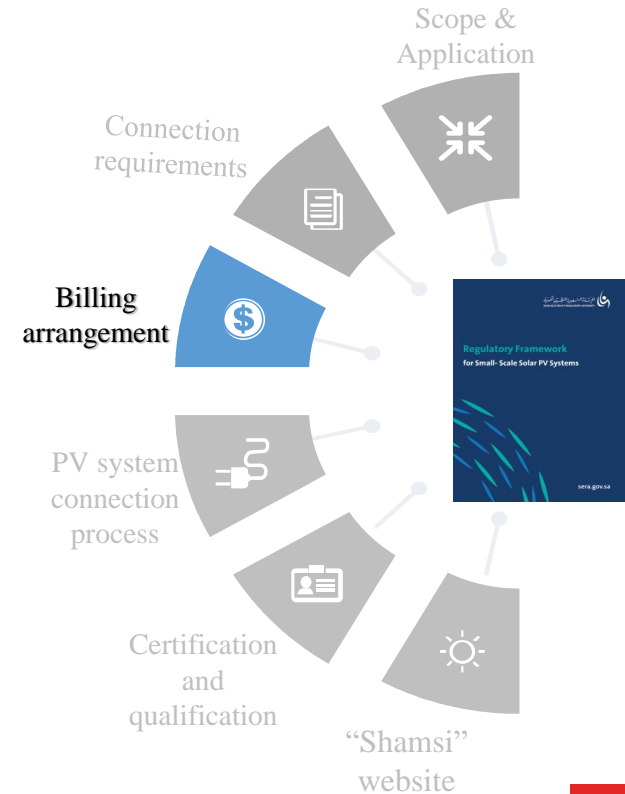
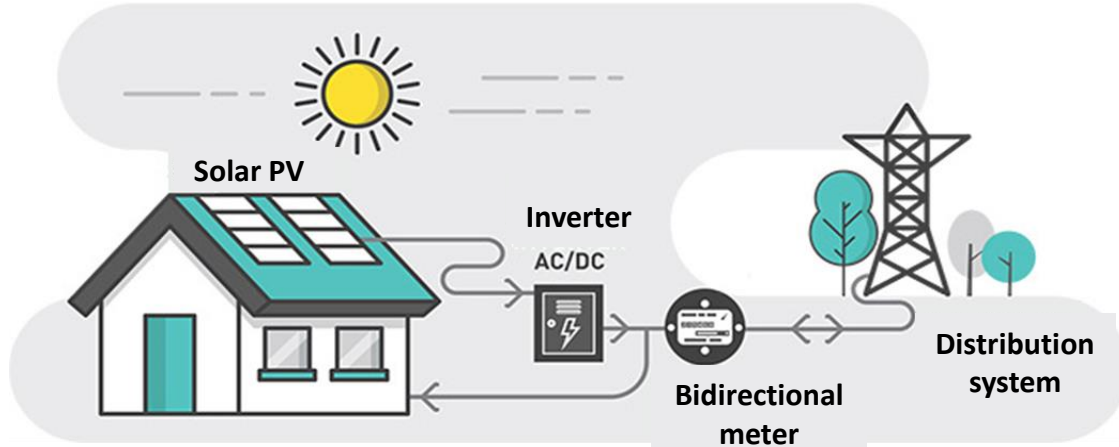
- **The system capacity shall not exceed the contracted load of the premises**



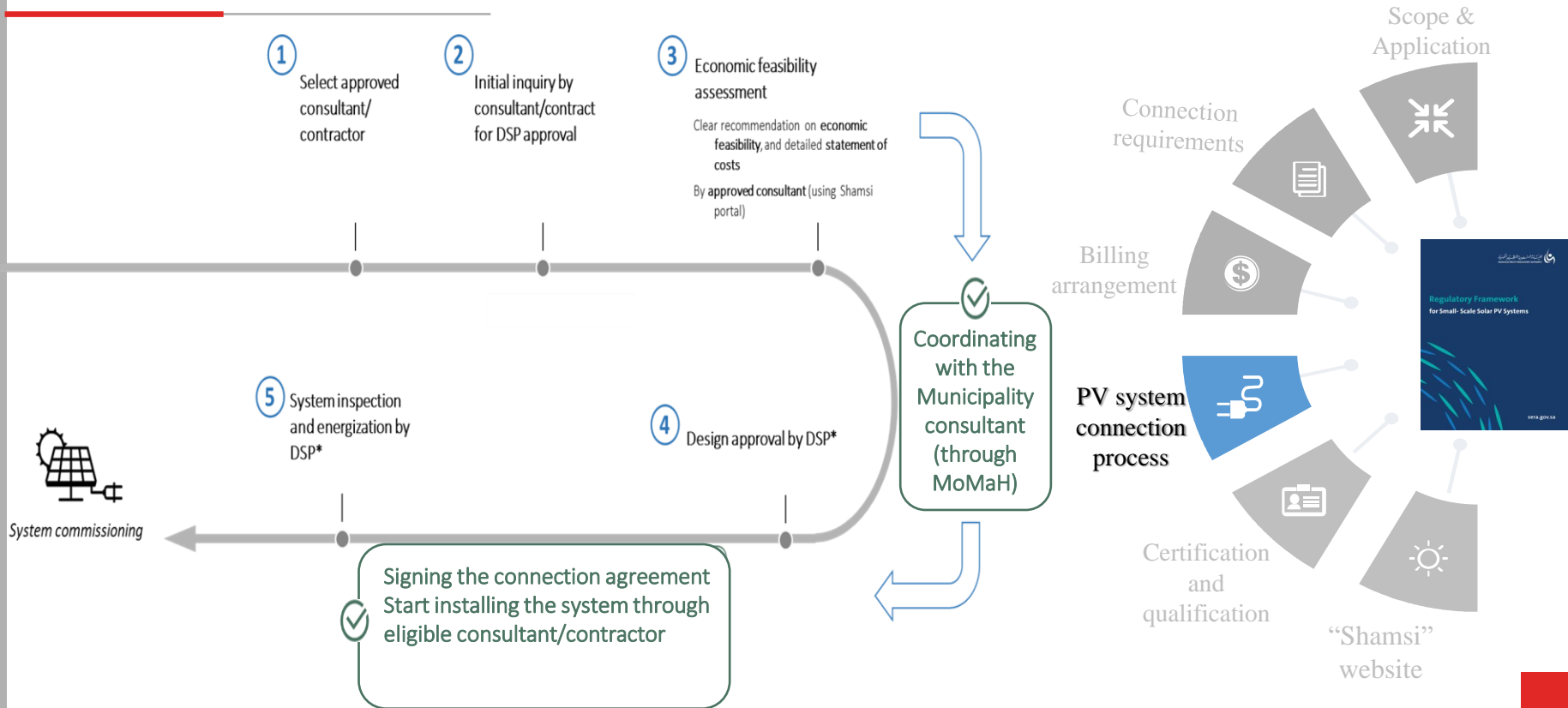
Important Elements of the Regulatory Framework

Net Billing meaning:

The energy exchange system and financial arrangements between the consumer and the distribution service provider, where the consumer gets electricity from the distribution service provider at the approved electricity tariff, while the surplus energy generated from small solar photovoltaic systems is exported to the electricity distribution system and recorded in the billing system as a financial balance.



Important Elements of the Regulatory Framework



Important Elements of the Regulatory Framework

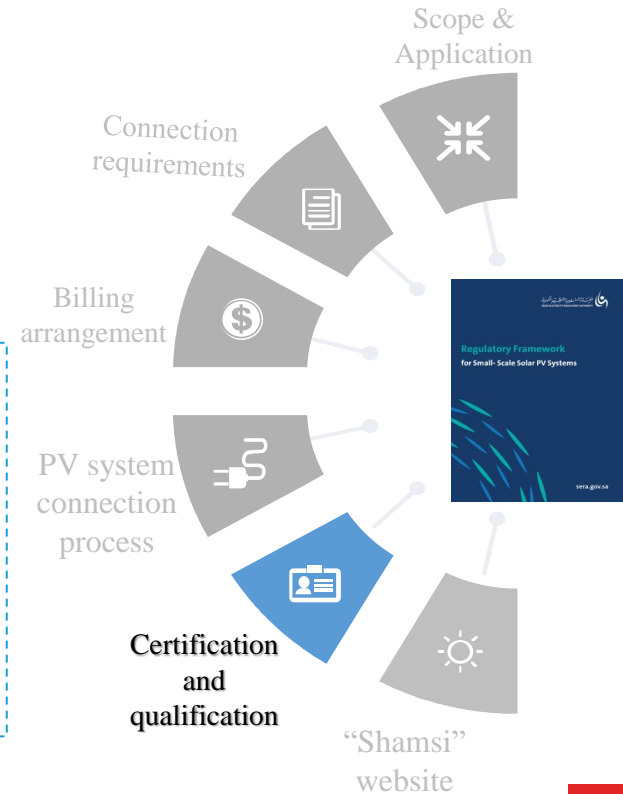
➤ The Qualification Committee is responsible for approving the qualification of contractors and consultants who are allowed to design, inspect, install and maintain small solar PV systems.



Qualification Committee

Headed by a representative from the Ministry of Energy and representatives from:

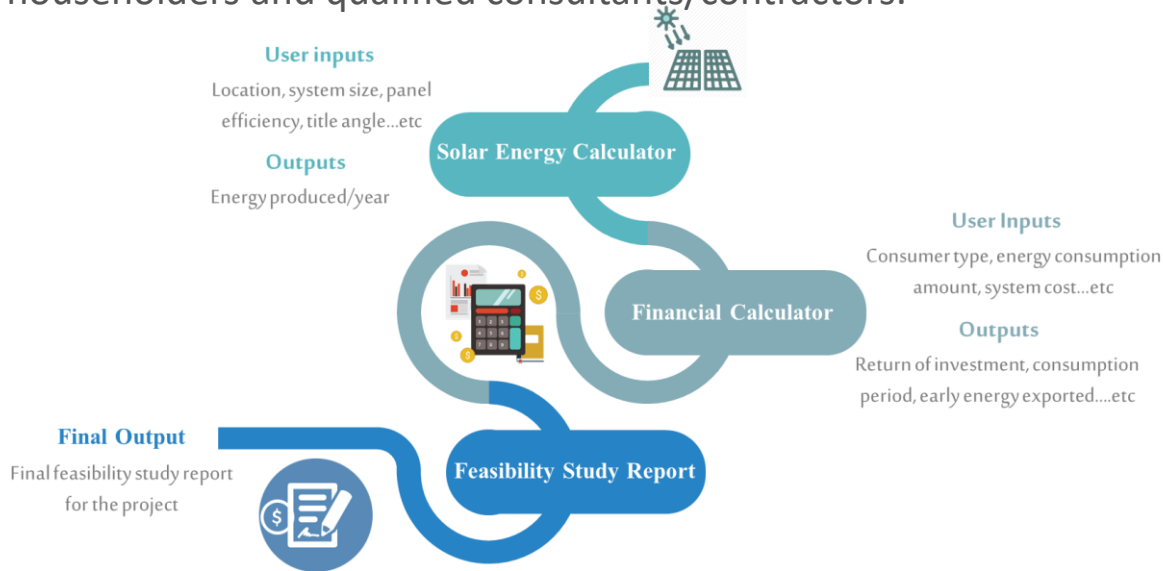
- Saudi Electricity Regulatory Authority
- King Abdullah City for Atomic and Renewable Energy
- Saudi Energy Efficiency Center
- Ministry of Commerce and Investment
- Ministry of Municipal and Housing
- Distribution Service Providers
- Two independent consultants



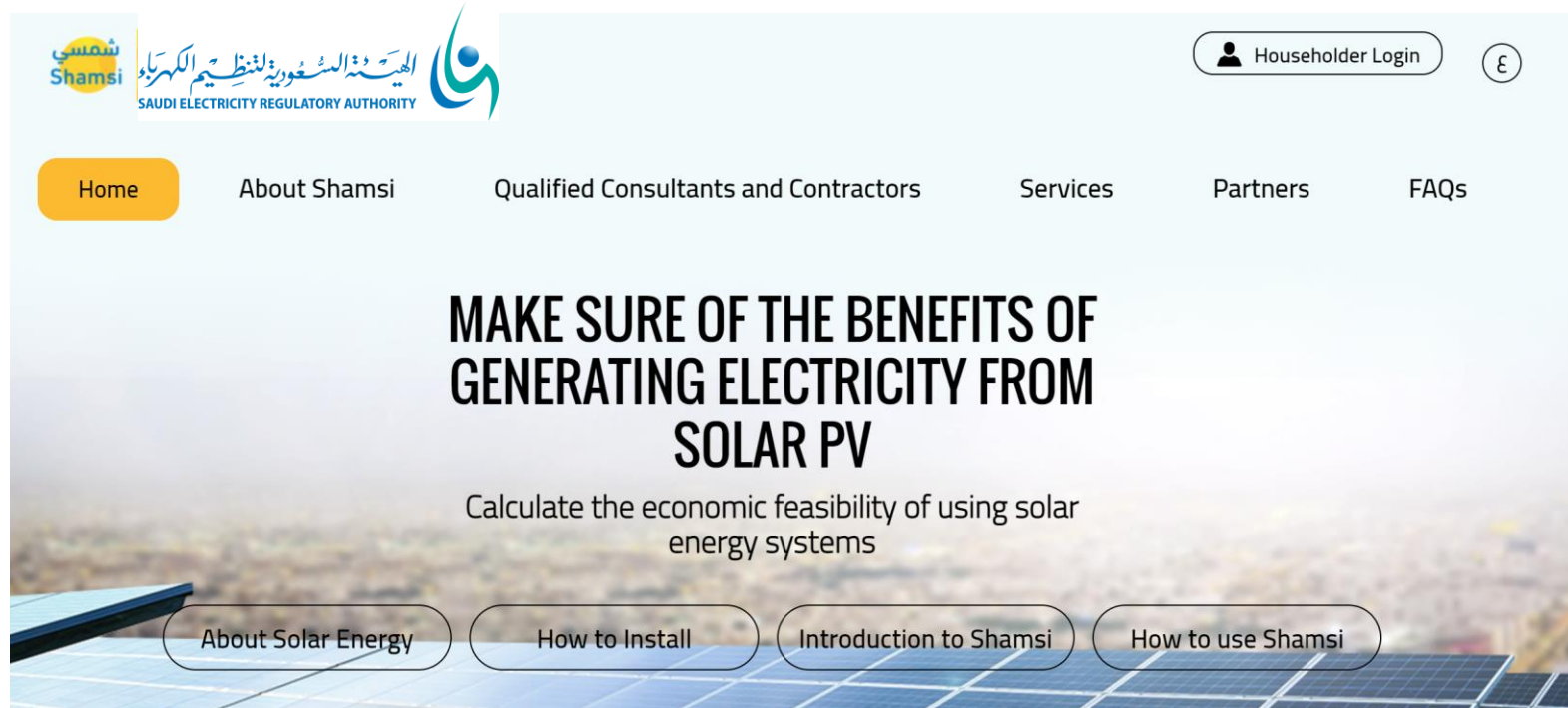
Important Elements of the Regulatory Framework

“Shamsi” website

The website aims to maximize the solar energy role in KSA by guiding the users in evaluating the expected benefit from solar panels installation through calculating the expected produced energy , providing financial feasibility and act as a liaison between interested householders and qualified consultants/contractors.



Support Scheme “1”: Lessons learned - Positive/negative outcomes



Website views: 125,762

Number of uses of the solar calculator: 33,440

Number of uses of the financial calculator: 17,871

Shamsi website: <https://shamsi.gov.sa/>

2

Regulatory Framework for Renewable Energy Generation for Self-Consumption

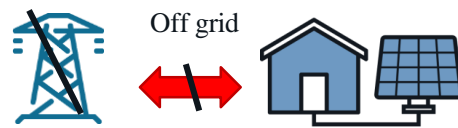
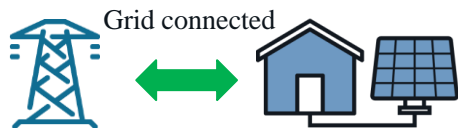
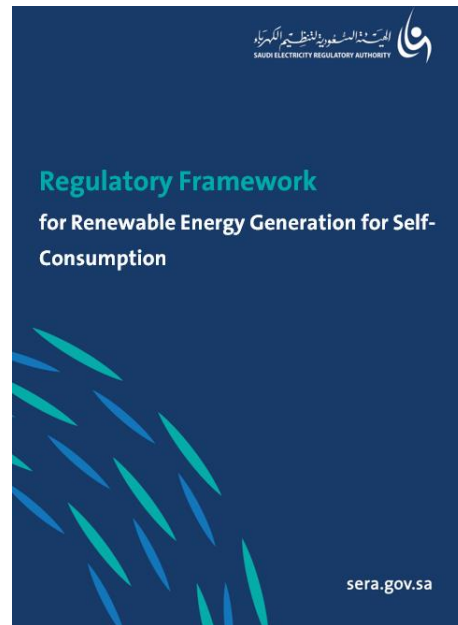


Introduction

2

Regulatory Framework for Renewable Energy Generation for self-consumption

- Requirements other renewable technologies, including photovoltaic above 2 MW.
- Requirements for on grid (transmission, distribution), and off-grid renewable systems.
- The maximum allowed capacity per premises is 30MW



Capacity
< 30MW




Other Tech.
< 30MW

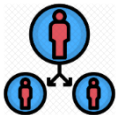
Important Elements of The Regulation




This regulatory framework applies to:

Entities

 Any entity involved in the PV system (Consultant/contractor)

 Eligible consumers

 Service providers

Technologies



< 30MW

< 30MW

Important Elements of The Regulation

Scope and applications

Requirements for grid connected and off-grid systems

Billing arrangement

Connection Process

Off Grid Systems

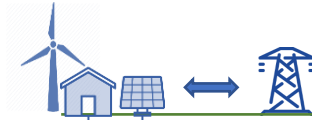


Generation and consumption on the same premises



Not exceeding 30MW

Grid Connected Systems



Generation and consumption on the same premises

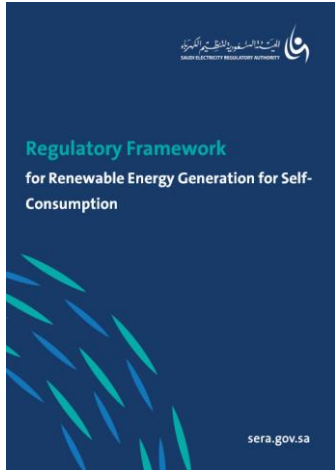


Shall not exceed the contracted load



Not exceeding 30MW

Important Elements of The Regulation



Compliance with Regulatory framework



Compliance with standards and codes

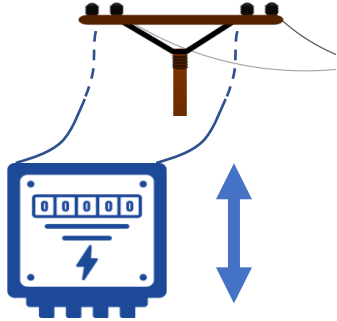


- SERA's Study Permit before the start any preparatory work for the purpose of establishing REG systems (including preparing planning, conducting studies and announcing publicly)
- SERA's Generation licensee before construction works

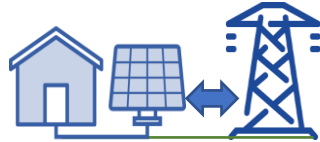


Maintaining the REG system

Important Elements of The Regulation



Net billing arrangement a mandatory arrangement for energy exchange



Applicable for grid connected systems



The financial balance can be utilized for several consumption accounts under the same Eligible Consumer



The accrued financial balance for Spill energy is (12) months from the date accrued

Important Elements of The Regulation



1 Grid Connected



2 Off grid



*SERA's work permit is required, before proceeding with any work related to the project including planning or public announcement | 22 |

Thank You

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