



Alhadbaa Modern Co. Ltd.



Infinity
Green Power

From Design to Implementation

Small-Scale PV Systems Projects



Alhadbaa Modern Co. Ltd.

Since its establishment in 2005, Alhadbaa, is a known name in the field of electronic industry and technology, renewable energy and power providing stations. It is also active in trade and general contracting in Mosul Iraq, Erbil Iraq and other countries such as the United Arab Emirates Dubai, and had worldwide dealings in many countries such as Syria, Turkey, India, Jordan, Europe, China and Taiwan.

We are officially registered in the Ministry of Planning as well as in the Chamber of Commerce: ALHADBAA Modern Co. Ltd. for General Trading & Contracting excellent class. Construction first degree and Electric and Mechanic third class.

Our main focus is in the field of electrical and electronics. In recent years, we witnessed a remarkable breakth rough in electronics designs and products development, electrical and electronic materials, laboratories testing equipment and renewable energy.



Infinity
Green Power

A special section with a specialized staff to install solar energy systems, wind power generation systems, and solar energy irrigation systems. The company has 9 years of experience in this field.

Installed Solar Power

20 MW



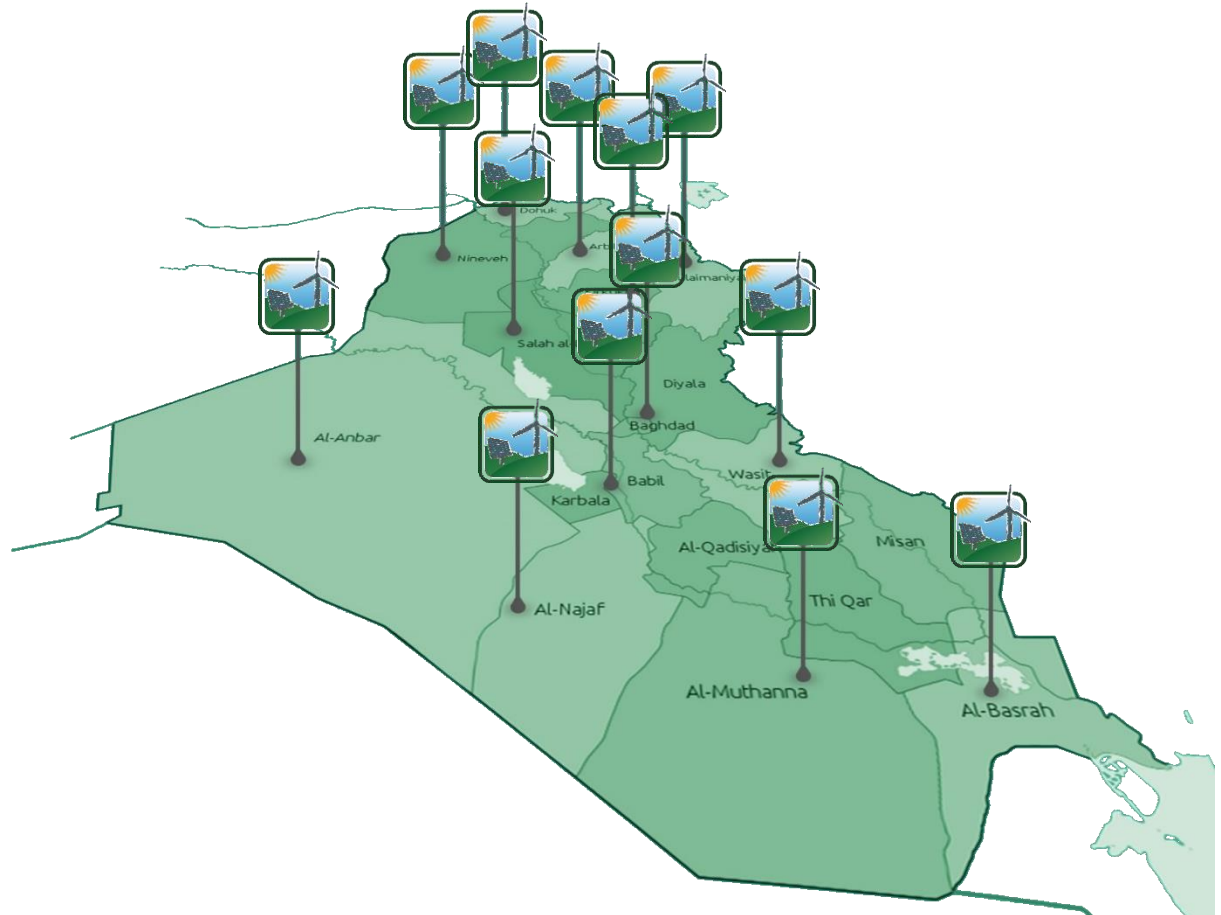
60,000
Ton CO2
Reduction



70,000
MWh
Generation



12
Years
Experience



Specialized teams in installing and servicing all types Solar systems



Residential

Projects for homes ranging from 3KW to 100KW



Commercial

Project for businesses ranging from 60KW to 500KW



Water Pumping

Projects for farms ranging from 10KW to 260KW



Water Heating

Project from small 260L to large 2000L





Alhadbaa Modern Co. Ltd.

Zaid Alhafedh

BSc. Degree in Electronics Engineering from University of Mosul (IRAQ).

MSc. Degree in Electronics Engineering from The University of Portsmouth (UK).

Certified PV Systems Trainer by RENAC (Germany).

More than 8 years of experience in PV Systems Design, Installation, Operation, and Maintenance.

Small and medium-scale solar PV projects (On-Grid, Off-Grid and Hybrid).

PV Systems design and installation engineer at Alhadbaa Modern Company – Infinity Green Power since 2017.



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1

Initial Meeting

Company and Services Introduction

Break the ice with the client by introducing our company and what we offer

Client needs and expectations

Understand what client needs are and try to make it possible

Possible solutions

Explore some rough possible solutions that could satisfy client needs

Site Visit

Schedule a meeting for a site visit



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Site Visit

Why?

The purpose or aim of the PV system?

Power and energy needs

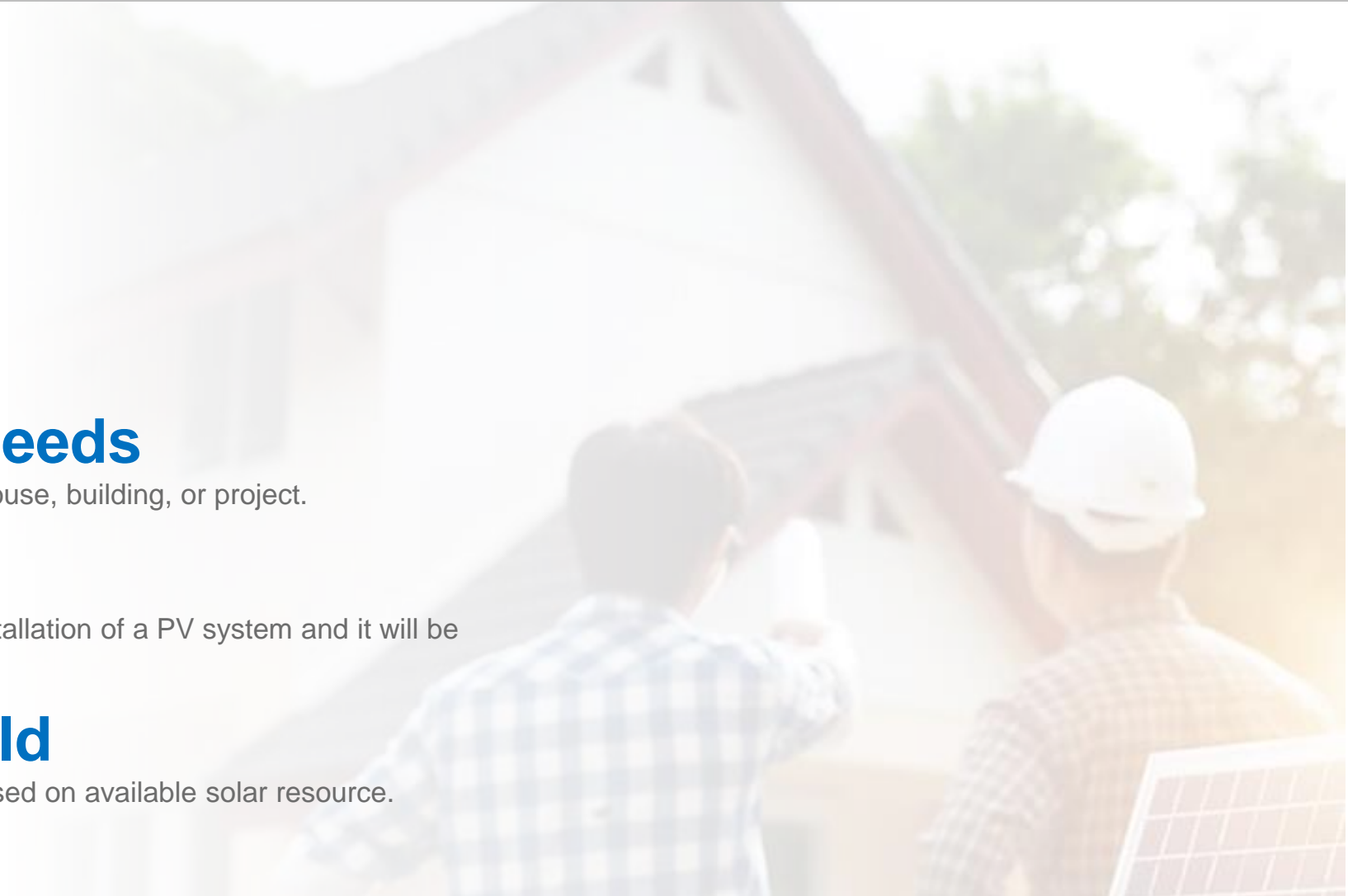
Estimate the power and energy need of the house, building, or project.

Solar Resource

Determine if the location is suitable for the installation of a PV system and it will be able to cover power and energy requirements.

System size and yield

Estimate system size and expected power based on available solar resource.



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3

Options and Feasibility Study

System Type?

Which system type best satisfy client conditions and power needs?

Site location and available space?

is it possible to install the system? is there enough space?

Technical Offer

Prepare a technical offer for the client covering all technical aspects of the system.

Financial Offer

Prepare a financial offer for the client covering all project items during installation and operation.



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Second meeting
Discussing possible options

Possible options

Discuss with client all possible option with advantages and disadvantages for each.

Technical offer review

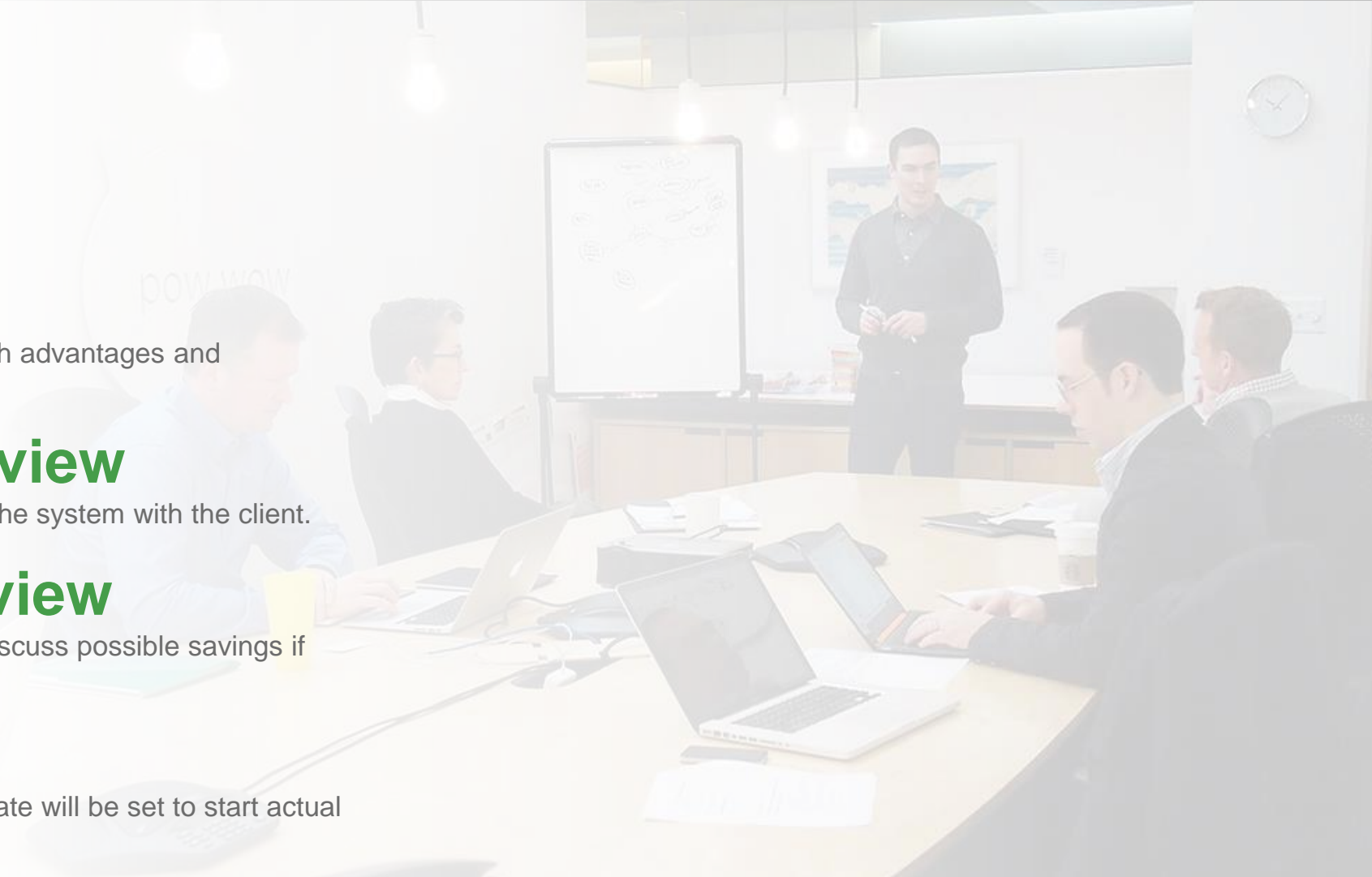
Carefully review the technical aspect of the system with the client.

Financial offer review

Review system cost for each item and discuss possible savings if possible.

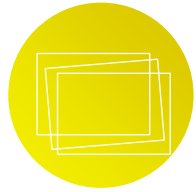
Project Launch

If project was accepted by the client, a date will be set to start actual project implementation.



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Design and
Installation Plan

Final Design Documents

Update technical documents based on final meeting with client.

All system items are in stock

Make sure all items required by the design documents are available.

Installation team briefing

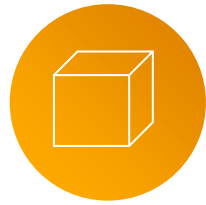
Design team holds a meeting with the installation team to brief them about all project aspects, projects aims, and design considerations.

Implementation plan

Installation team is now fully informed about the project and will prepare for the implementation. At this stage, another site visit needs to be conducted.

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Materials Delivery

Site ready?

Make sure site is prepared, safe, and secure to receive materials.

Transfer all items at once?

Transport all at the same time or transport as needed.

Proper loading of items

Loading of items and the order they are loaded and unloaded is critical as wrong loading may lead to broken or damaged parts and big delays.

Distance and road tertian?

Need to make sure that the vehicle assigned for this job is appropriate.



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System Installation
and Commissioning

Design and Implementation Plan

Installation team need to follow the implementation and design plans to the letter. All documents need to be explained to all workers in site.

Safety measures

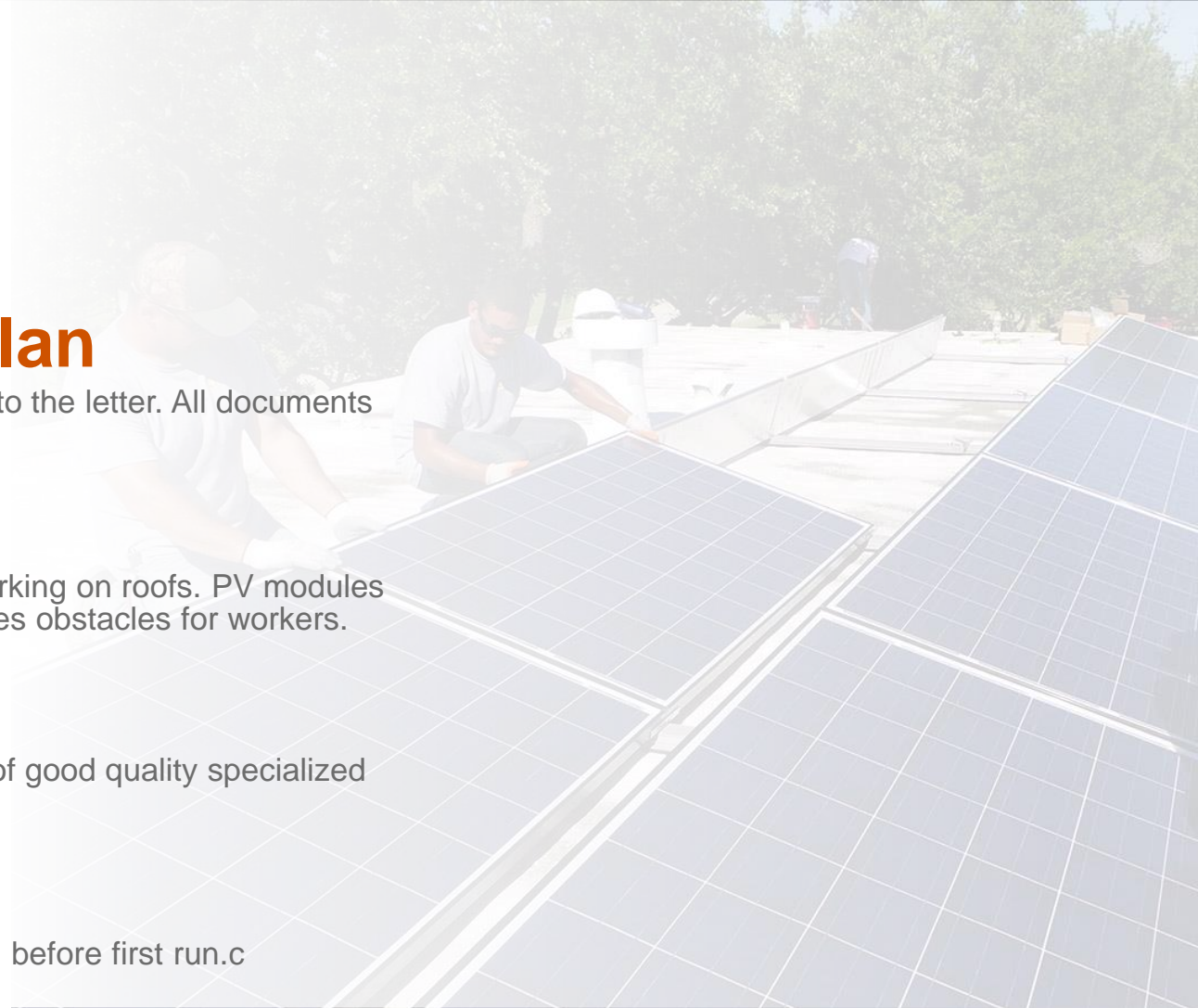
PV work sites can be very dangerous locations and often involve working on roofs. PV modules always produce voltage and can't be turned off. PV structure becomes obstacles for workers.

Tools and devices

PV systems are intended to work for 25+ years, that is why the use of good quality specialized tools and equipment is essential.

System Commissioning

Making sure everything matched the design and is correctly installed before first run.



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System Monitoring and Service

Key to successful operation

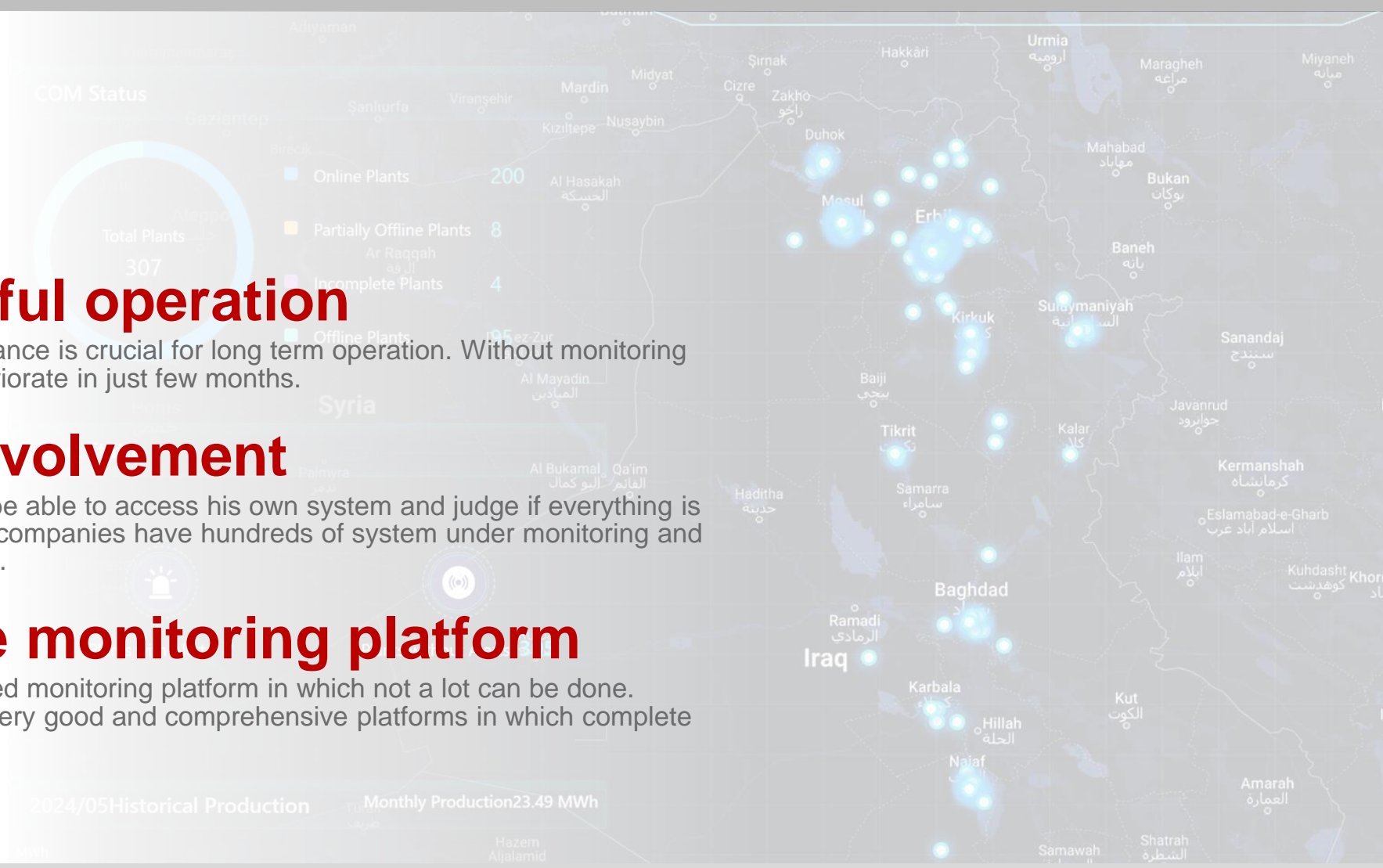
PV system monitoring and maintenance is crucial for long term operation. Without monitoring and maintenance, system can deteriorate in just few months.

Client/Owner involvement

The owner of the system needs to be able to access his own system and judge if everything is working as it should because often companies have hundreds of system under monitoring and may oversee some abnormal cases.

Comprehensive monitoring platform

Some manufactures provide a limited monitoring platform in which not a lot can be done. Others, on the other hand, have a very good and comprehensive platforms in which complete control is available.





Thank you for your time