

# The Guide to Renewable Energy Security and Efficiency Using IoT Cameras

MOBOTIX AG



# Introduction to Renewable Energy and Cameras

Renewable Energy is the future, and it is rapidly expanding. It's not just wind and solar: hydro, geothermal and biomass also produce power.

But as these technologies become more popular, we need to make sure we are doing it responsibly – cutting our greenhouse gas emissions to curb climate change, keeping our workers safe, and protecting our valuable assets and investments.

## Benefits of Investing in IoT Cameras

Investing in Security Solutions helps you to protect the people and assets that are crucial to your business. Surveillance cameras that connect to the internet – or IoT (Internet of Things) cameras – can help you do just that.



### Ensure comprehensive security at all levels

- Secure your perimeter
- Reduce vandalism & criminal activity
- Deter theft and pilferage
- Track people, vehicles & deliveries for more efficient management



### Save and earn cash

- Unlock operational efficiencies
- Reduce wastage & keep track of everything that happens on site with 24/7 monitoring
- Improve business resiliency through minimized downtime due to security breaches or equipment failure.



### Protect the environment

- Monitor mission-critical systems
- Ensure environmental compliance
- Reduce carbon emissions by monitoring HVAC systems.



### Reinforce your quality and your image

- Increase customer satisfaction with improved safety
- Improve staff morale with safe, secure work environments that are free from harassment or bullying.



### Simplify your life and that of your employees

- Improve safety for workers across your site
- Ensure continuity of service by monitoring critical systems.



## Chapter One: Security at All Levels

The first major investment in renewable energy security is looking at your whole perimeter and making sure that it is secure.

We will go through each of the ways to secure your perimeter so that you can see where you need security measures in place or improved.

### Securing Your Site: The Perimeter

Perimeter security is very important for all companies, including renewable energy sites. As we know, there are a lot of environmental and safety risks, and we need to make sure that all of them are covered.

Therefore, the first step is to make sure that we secure your perimeter.

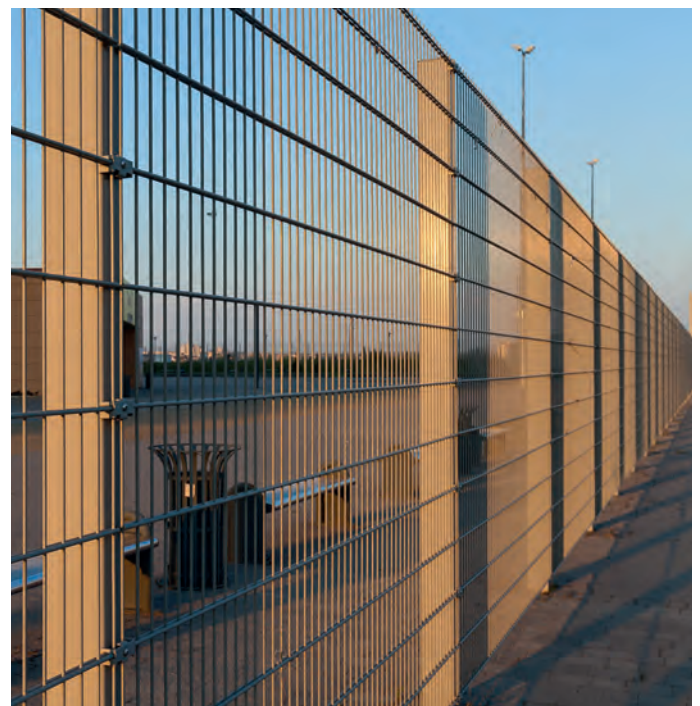
As any security plan starts with a risk assessment; we need to know what we want to protect.

### The Important Assets You Need to Protect At Your Renewable Energy Site

- **Your buildings.** You need to protect your buildings, whether they are employees' homes or office buildings.
- **Your people.** This is more than just protecting workers on site – you need to think about their families as well and how they will be affected if something happens.
- **Your data & equipment.** You have an obligation to protect your data and all the equipment you use in order to make sure that it does not become corrupted.

- **Your customer data.** No doubt, many of your customers will want their information kept safe when they are doing business with you.
- **Your reputation.** Finally, if word gets out about security breaches at an energy site, it could have reputational damage for your brand.

All of these are valid reasons for investing in security at renewable energy sites, and they are likely to be the same no matter what kind of site you have or what region you are in.





## Securing Your Network: Cybersecurity

We have talked about the need to protect the perimeter, but we also need to make sure that we are protecting our network and all the connected devices on site.

When renewable energy sites go into production, there will likely be equipment that is connected to this network, for example, monitoring tools or HVAC systems. These will need extra protection, especially considering that they are likely to be connected devices.

The best way to do this is by using cybersecurity for renewable energy sites.

### How Can Cybersecurity Help Your Site?

- It will help your system become more secure against outside threats
- It makes it easier to monitor any attempts at breaching your network or systems – this is a great way to check whether the systems you have in place are working.
- It will monitor all the devices that connect to your network, such as sensors or IoT cameras, and make sure that they remain protected.

At MOBOTIX, one of the things we do is to make sure that all our devices are secure. We also want to give you some real benefits so that it makes sense for your business to invest in security measures.

Our decentralized architecture is designed to give you increased security because it takes many different components and makes them into one system.

Secondly, our encryption ensures that only the right people can access your data at all times. It means others can't get in without permission. Finally, each of our devices is made with special care to make sure that they are secure.

## Securing Your Assets: Reduce Vandalism and Criminal Activity

Vandalism and other activities by criminals can be extremely costly – not just because of repair costs but because it could put people's lives at risk.

It is important to review your security plan so that you can protect against this kind of activity, and one way to do this is using IoT cameras.

Using AI-powered apps, MOBOTIX cameras can help with intrusion detection and loitering detection. This way, you will know when there is a problem and who has caused it.

## Securing Your Site: Early Fire Detection and Protection

A video analytics platform and IoT cameras can help you to prevent damage to equipment and stop fires before they get too large, which could save your site thousands of dollars.

This is because it will be able to spot smoke or flames sooner than humans, and ensure that the fire does not spread further. This means that your employees can act much earlier on in the process and can even help to reduce repair costs.

Whether you're monitoring battery packs or wind turbines, MOBOTIX cameras and video analytics can be used to help you spot problems before they get out of hand.



**MOBOTIX**

BeyondHumanVision



## Chapter Two: Process Optimization

In addition to improving the security of your site, it is important to make sure that you are protecting all your employees. This ensures a safe working environment and gives them some peace of mind when they know that they have access to some extra protection.

### Optimize Your Process: Monitoring of Production Steps

In the renewable energy business, you need to make sure that your production process is as efficient as possible.

The right analytics tools will allow you to monitor the different steps of your production process and ensure that they are going smoothly. This means that you can correct problems before they become a big issue, which could save your business money.

When it comes to specific renewable energy production steps, it is possible to use video analytics for the following:

- Monitoring of wind turbines during operation
- Monitoring of battery packs
- Inspection of solar panels for production, tracking and anti-soiling purposes

The right AI-powered apps will give you a better overview of your production process and ensure that there are no problems along the way.

### Optimize Your Process: Remote Maintenance of Machines

In addition to being able to monitor your renewable energy production, it is also possible to use video analytics for remote machine maintenance.

You can also use AI-powered apps to control machines with your smartphone or computer. Additionally, you will be able to monitor the whole area around these machines just by checking your app.

With on board camera technology, the sensors of your MOBOTIX camera can provide you with the data and analytics that you need to in a centralized location so you can determine whether remote machine maintenance is necessary.

The right tools can help you to save time and cut costs. You won't have to send anyone out on site, which means less money spent on fuel and fewer hours worked.





## Chapter Three: Special Environments

When you're investing in IoT cameras, it is also important to make sure that your renewable energy assets are protected in more extreme environments.

### Extreme Temperatures: Protection from Dust, Heat and Cold

Since most of your assets will be outside, it is important to know how they will behave in different temperature conditions. This can help you with maintenance tasks, for example.

When establishing a video surveillance solution, you will want to make sure that your cameras can handle the heat and cold, since these are some of the worst environmental factors that they will have to face.

Depending on where you decide to place your assets, they may need an extreme temperature resistance certificate. If this is not the case, however, you can choose MOBOTIX cameras that are certified for indoor and outdoor use.

When it comes to cold, the most important factor is whether your camera can operate in temperatures below freezing point. Most of MOBOTIX cameras are designed to work at minus 50 degrees Fahrenheit with no problems. However, if your camera does need to be more durable, you can choose one that can operate in temperatures as low as **minus 40 degrees Fahrenheit**.

Regarding heat, you will need to make sure that your cameras are designed to deal with high temperatures. If they are not fireproof, they will need to be able to dissipate heat. Otherwise, the heat could damage the camera's components and effect its performance.

### Extreme Humidity: Protection from Corrosion and Condensation

You need to protect your assets against humidity in many cases because it can cause corrosion. If the humidity is so high that it leads to condensation, your camera could get wet.

Most MOBOTIX cameras can handle high humidity without any problems, but it's important to check that they are designed to work in your specific climate conditions.

### Extreme Vibration: Protection from Natural Disasters

The worst-case scenario is that you will need to protect your devices against natural disasters. If the environment where they are placed is susceptible to earthquakes or floods, make sure that your cameras can handle this type of situation.

MOBOTIX cameras come with a durable case and a stainless-steel frame. They offer a high level of resistance to rain, dust and floods, as well as a wide operating temperature range.

Additionally, the lenses on your MOBOTIX cameras have been specially developed to prevent them from getting damaged by vibrations.

Each MOBOTIX camera meets the strictest international standards for vibrations and shock, so you can be sure that they will handle a disaster.

# Chapter Four: Getting More Out of Your Cameras

In this chapter, we'll look at how you can use your MOBOTIX cameras to get better business results.

One of the best ways to do so is by using artificial intelligence (AI) on them. The AI helps the camera gain new abilities and provides you with data that will help you make decisions.

The following are some of the advantages of using AI on IoT cameras:

## Customized Data

The AI can learn about your business, so it can start providing you with customized data that pertains to your interests. This gives you more relevant information and reduces the time that you must spend looking for it.

## Faster Reactions

The AI enables the camera to react faster. For example, if a person walks into an area where they are not allowed, the camera can automatically start recording and send you a notification about it. This ensures that unwanted people cannot easily get access to your assets or facilities.

## Data Protection

MOBOTIX's decentralized Cactus Concept increases your cybersecurity and keeps your data protected from potential hackers. This gives you the opportunity to protect sensitive information and comply with regulations such as GDPR.

It is also possible to upgrade your devices so that they can perform multiple tasks at the same time. For example, using AI on your cameras makes it possible for them to collect data about people, vehicles, and objects.

## Efficient Workflow

By gaining new abilities, the AI can help you automate certain tasks that are prone to human error. Your employees will have more time to focus on other things that will benefit your business.

For example, the AI can:

- Identify the objects which your camera captures and adjust parameters such as brightness or contrast of images.
- Follow moving objects and record them with high picture quality. This feature is great for video monitoring of vehicles, people, and animals.
- Take care of repetitive tasks like data-based image analysis.
- Manage the camera's image storage based on importance.



## Chapter Five: Putting It All Together

By now, you should know the benefits of using MOBOTIX cameras. You also should be familiar with their different characteristics and how they can help your company.

There are **eight key AI apps** that MOBOTIX recommends for Renewable Energy Businesses.

- **MxAnalytics AI** - Reliable, object-based counting and behavior detection.
- **MxActivitySensor AI** - Reliable object-based motion detection independent of weather and brightness interference.
- **Irisity IRIS Core Analytics Intrusion** - The specialized application reliably detects intrusions, even if the people or vehicles only cover a small part of the field of vision.
- **AI-Intrusion PRO** - Shows intruders crossing one or a sequence of virtual lines. Multiple lines increase system reliability.
- **AI-Heat** - Identifies frequently visited areas (hot spots) and less frequented areas (dead areas) based on the length of time people spend there.
- **AI-Fire** - Early detection of flames indoors and outdoors (e.g. vehicles, containers).
- **AI-Smoke** - Smoke detection inside and outside. For all optical image sensors.
- **AI-Loitering** - Detects suspicious behavior of people who remain in certain areas for an extended period of time.
- **Visage Face Recognition** - Face recognition using stored image data. With 97% success probability with access control applications.

If you're looking for more information on MOBOTIX cameras or any of the other products that we have available, you can learn more about them by contacting us.

You can also **request a product demonstration** from one of our sales representatives. They will be able to tell you everything that you need to know about MOBOTIX and what it can do for your business.



Contact us  
[us.info@mobotix.com](mailto:us.info@mobotix.com)



## CONTACT US

- [www.mobotix.com](http://www.mobotix.com)
- [us.info@mobotix.com](mailto:us.info@mobotix.com)

# Intelligent Video Security Solutions Made in Germany

MOBOTIX offers a comprehensive range of solutions for all aspects of video-based security systems. We develop high-quality, decentralized, energy-efficient systems that mean our customers save money on every MOBOTIX system installed.

Our motto **Beyond Human Vision** is also our mission: MOBOTIX is fully committed to making itself the most reliable company it can be, one that protects people and property by using intelligent, cyber-secure video technology to go beyond human vision.



EN\_03/22  
MOBOTIX AG  
Kaiserstrasse  
67722 Langmeil, Germany

[www.mobotix.com](http://www.mobotix.com)  
[us.info@mobotix.com](mailto:us.info@mobotix.com)

MOBOTIX is a registered trademark of MOBOTIX AG in the European Union, the USA, and other countries. This may only be transferred to trade or commercial partners. Subject to change. MOBOTIX does not assume any liability for technical errors, printing errors or omissions. All rights reserved. © MOBOTIX AG 2022

**MOBOTIX**  
BeyondHumanVision