



## Transforming overhead power line surveillance

Reduced Cost – Real-time Monitoring – Digital Image Detection

Power grid operators are set to save time and money with new surveillance technology for overhead power lines. The monitoring system is developed by Laki Power and uses MOBOTIX cameras. For the first time, operators will have live, real-time video images of critical infrastructure from surveillance devices attached to power lines. Operators worldwide spend millions ensuring power lines are protected against fire and can operate in harsh and inaccessible environments. But installing and powering sensor equipment in remote areas is difficult and costly. The Laki Power technology dramatically improves access and cuts surveillance costs by over 90 percent. It has been developed in extreme Nordic weather conditions and uses MOBOTIX cameras to survey power lines and masts.

### Risks & Challenges

As society switches from fossil fuels to more electricity, demand on power infrastructures increases significantly, so power grid operators need to maximise network capabilities. But protection against threats like fire, line icing and extreme environmental conditions in remote areas make monitoring network integrity challenging. Surveillance and security operations are based on regular visual inspections – sometimes requiring helicopter fly-bys - which are costly and time consuming. Spotting instant threats like fire are particularly difficult. Using CCTV equipment has, until now, been almost impossible because of power requirements in areas where there is no access to electricity. Installing diesel, solar or wind generators is costly and only for the most challenging locations. Even then, such systems do not produce enough power to ensure optimum CCTV performance. Often existing monitoring and CCTV equipment used in harsh environments does not last very long.

### Key Data

#### Sector

Electricity Transmission and Distribution

#### Customer

Laki Power

#### Partner

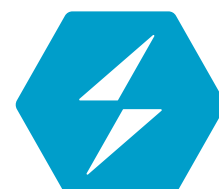
Hafnes ehf

#### Timeframe

2020-2021

#### Products

S16, S74



**LAKI**  
POWER

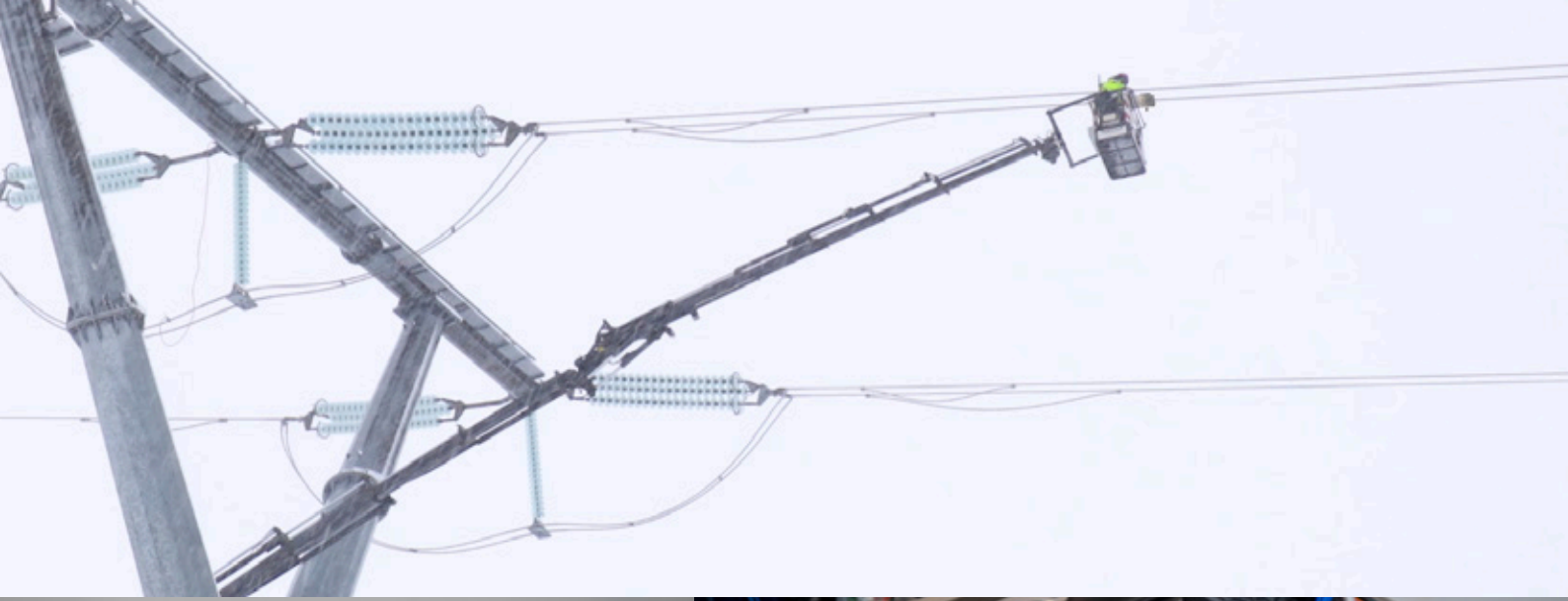
“  
The MOBOTIX solution is critical to helping us develop an innovative way for power grid operators to transform the surveillance of overhead power lines. MOBOTIX enables our technology to deliver live video and high-resolution images in harsh, inhospitable conditions. It means that we can help grid operators to fast-track digital surveillance of network operations at a fraction of current costs.  
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*Bjorgvin Sigurdsson, CEO, Laki Power*

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## Solutions & Benefits

MOBOTIX and its Icelandic business partner Hafnes ehf have helped Laki Power develop the new grid monitoring technology. For the first time, it gives power grid operators real-time surveillance images from equipment located directly on overhead power lines.

The Laki Power LKX multi-purpose surveillance station is designed to withstand the high-voltage and electromagnetic fields that prevail on power lines. It uses MOBOTIX cameras and other sensors to monitor power cables, pylons and the immediate environment for damage and threats like fire, ice or fallen trees. According to estimates from grid operators, Laki Power saves over 90 percent of installation costs compared to current solutions.

After several failed trials with other CCTV equipment, Laki Power chose MOBOTIX technology. Besides image quality and clarity, MOBOTIX cameras are very durable especially in harsh conditions. The cameras are fibreglass so do not corrode or interfere with conduction and, with other components, cut the number of moving parts making the LKX less likely to fail.

The LKX has camera heaters which mitigate freezing and lens fogging due to moisture. Because of the MOBOTIX equipment and robustness of the product, Laki Power estimates the LKX can last for up to ten years before it may need replacing.

The LKX replaces regular, visual inspection with remote, 24/7 video surveillance, making costly and difficult onsite visits redundant. If an on-site inspection is required, real-time video can check if conditions are safe. Video data is also used to review incidents for future prevention and proactive rather than reactive maintenance.

Depending on application, the LKX uses several MOBOTIX cameras including high-resolution, 360-degree ones with night vision and fish-eye lenses. Laki Power is also testing MOBOTIX thermal cameras for fire event detection. The LKX generates power from the electromagnetic field surrounding the power line using induction. This removes the need for a separate power source.

## Summary

With MOBOTIX CCTV equipment, Laki Power is helping power grid operators cut costs and improve power network management and energy transmission rates. Alongside trial projects with the Icelandic and Norwegian grid operators, Landsnet and Statnett, Laki Power is working with multiple other operators around the world to test the product. Laki Power has established an ongoing partnership with MOBOTIX to develop and enhance the LKX product platform with advanced capabilities. This includes technologies such as MOBOTIX thermal imaging cameras to detect wildfire risks and helping operators leverage big data and video images for intelligent, AI-based network management.