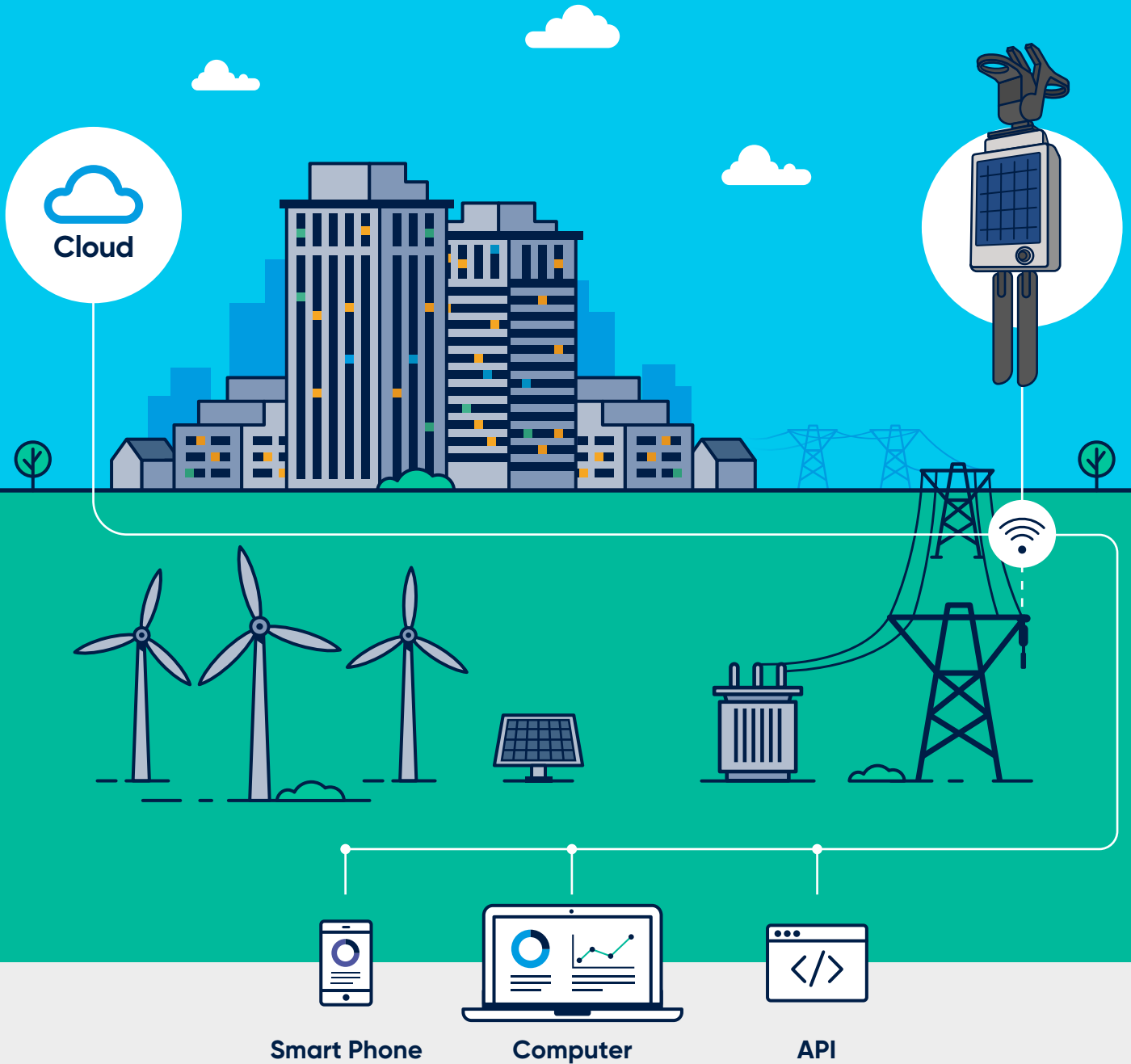




SENTRISENSE

Making the grid smarter



Your Power Line Insights and Performance Analysis

Vision

To digitize and optimize the most geographically distributed human infrastructure on earth, the power grid.

Mission

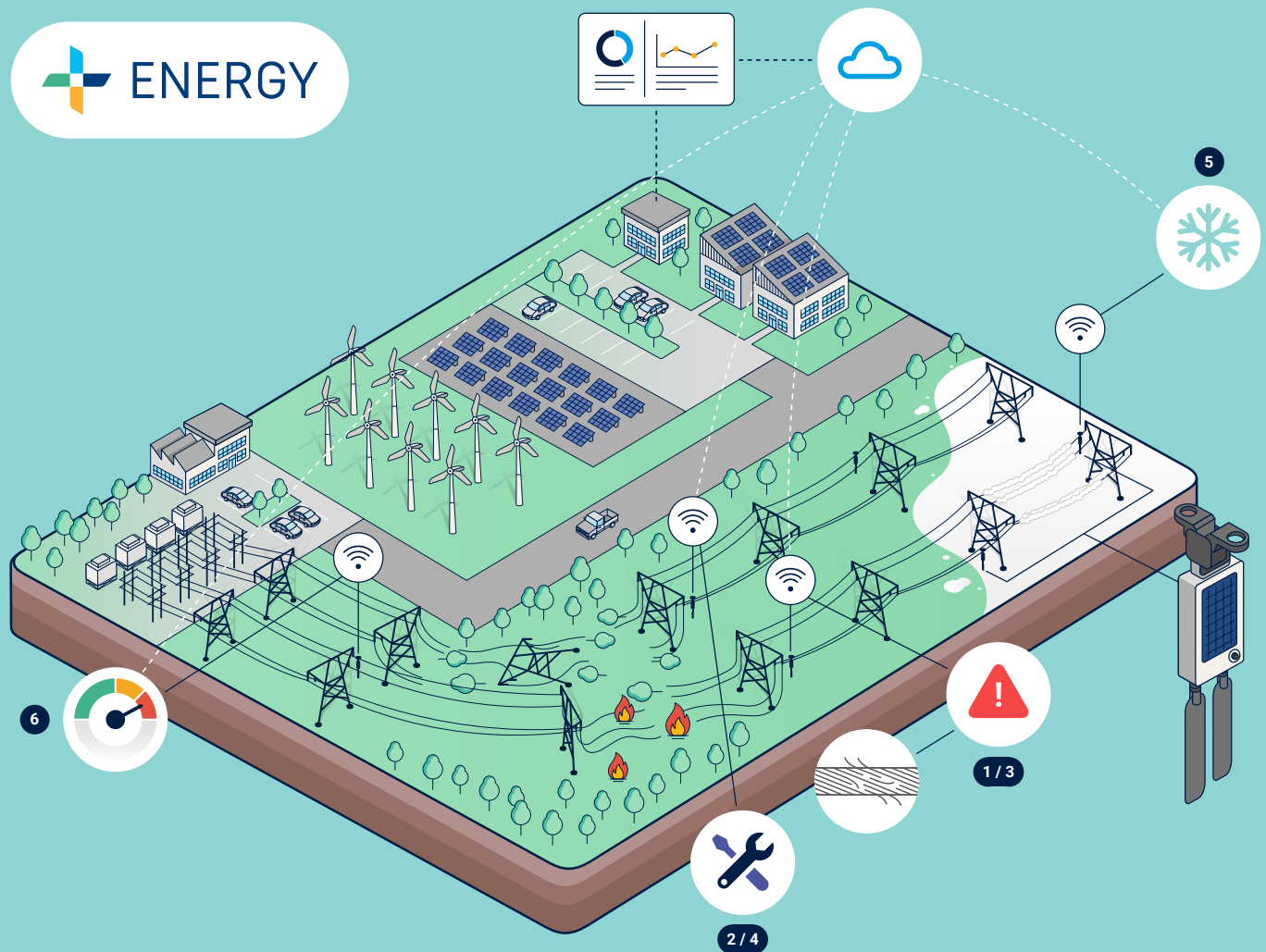
Sentrisense aims to optimize power grid operations as well as smoothing the energy transition. Through our innovative solutions we are committed to increase energy efficiency and reducing the environmental impact while focusing on leverage the existing infrastructure.



**Insightful resources delivery for optimizing
operation efficiency and grid performance**

Sentrisense is an industry 4.0 solution based on IoT concepts and carefully designed to enable you to make better decisions when it comes to the infrastructure operational efficiency, maintenance, and competitiveness by bringing insightful real-time reports as well as long-term analysis about their assets.





Sentrisense value proposition relays in three main aspects:

- Quick Incident Detection: enabling rapid and accurate identification of failures in the grid, allowing maintenance teams to respond faster, minimizing the damage.
- Early Fault Detection: leveraging data gathered directly from the infrastructure, enhancing predictive maintenance and better planning of power line maintenance teams.
- Dynamic Line Rating: improving the grid's capacity, allowing for increased energy transmission with the same infrastructure moving towards a power grid efficiency optimization.

① Wire degradation: aging, corrosion, fatigue predictive analysis

② Reports on fallen conductors and tilted towers

③ Alerts on fallen trees and strong winds affecting the line

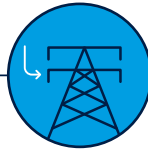
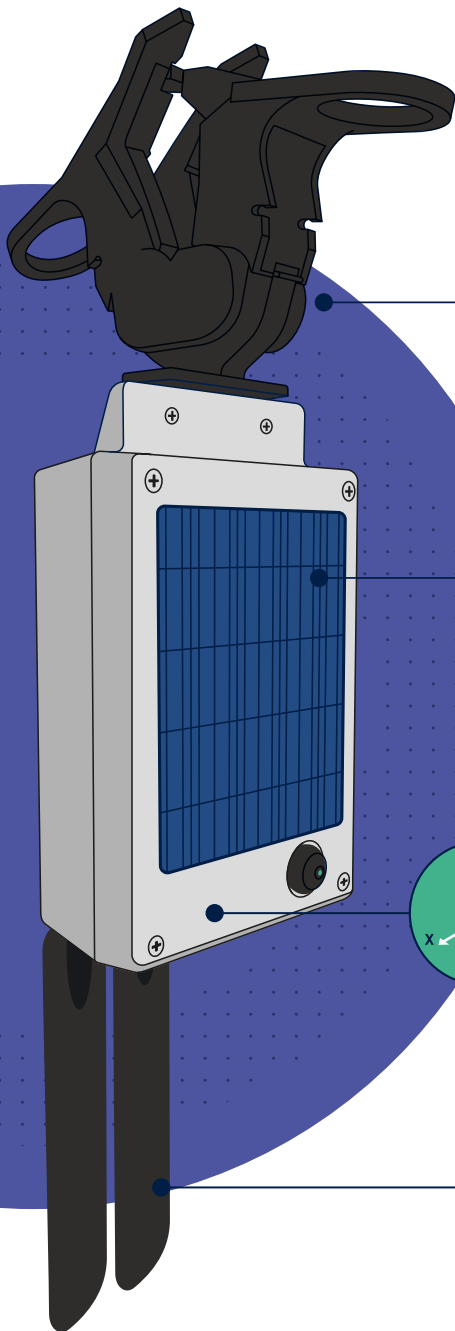
④ Warning on bush fires taking place around the power line

⑤ Detection of clearance to ground thresholds and ice deposits

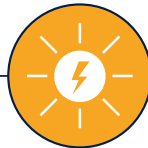
⑥ Ampacity modelling and Dynamic Line Rating features

How Does It Work?

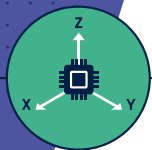
A cloud-based platform featuring AI/ML algorithms which is able to collect, store and process data coming from the swarm of sensors spread across the power lines. Delivers real-time and long-term actionable alerts and reports, letting you make more accurate and faster decisions.



The device is attached to the cable with a standard clamp for power lines. It is possible to install it in a hot line, and even by using drones.



Self-sufficient. Solar energy harvesting combined with a built-in battery. Several operation modes, up to an run autonomously up to 8 months with external power source.



Built-in sensors for analysing oscillations, vibrations and tilting, combined with a thermal sensor for performing Dynamic Line Rating.



The device is designed for connecting to the internet through several communication layers such as 3G/4G, WiFi, NB-IoT or Satellite.



“ Transelec has been working since 2016 with Sentrisense in a 4.0 asset management initiative for the detection of high-voltage line theft through Internet of Things technologies. ”

Alejandro Rehbein Oroz

Chief Strategy and Innovation Officer

Transelec S.A" por "Transelec S.A., the largest power transmission company in Chile





Innovation, quality, and tradition at the service of the power industry

Hammarprodukter, the market leader in Scandinavia for manufacturing power transmission and distribution signs, & Sentrisense have signed a distribution agreement. Now it is possible to get Sentrisense in more than 30 countries. Together, Sentrisense & Hammarprodukter are taking a multi-billion dollar industry to the next level.



Benchmarking wire integrity

In some cases, an external event such as a bushfire can damage a power line. Despite the line being operative, it could have structural damage which in the long term could trigger a wire cut. As a preventive measure, all the power lines could be replaced, but in some cases this cost could be up to one million dollar per kilometre. When it comes to the assessment of the situation and the decision of replacing or repairing the line, Sentrisense has the ability to analyze the overall health of the conductor, making that decision easier.



Power line and poles inclination

After a windstorm, tornado or hurricane, power lines can be destroyed and the system can be heavily affected. But since Sentrisense does not depend on energy from the line, it can keep working and letting the customer know which areas are affected and require actions to be taken.



Photo:
<https://abcnews.go.com/US/puerto-rico-warned-power-grid-literally-falling-maria/story?id=50560446>

Ice deposits detection

Ice deposited in power lines is a huge issue that costs a lot of money to transmission companies. By analyzing the mechanical behavior in the line it is possible to detect early enough that the ice is actually accumulating in the line, enabling the ability to act before it becomes a major issue.



Photo:
<https://www.popsci.com/science/article/2009-10/ice-breaker/>



Bush fire prevention

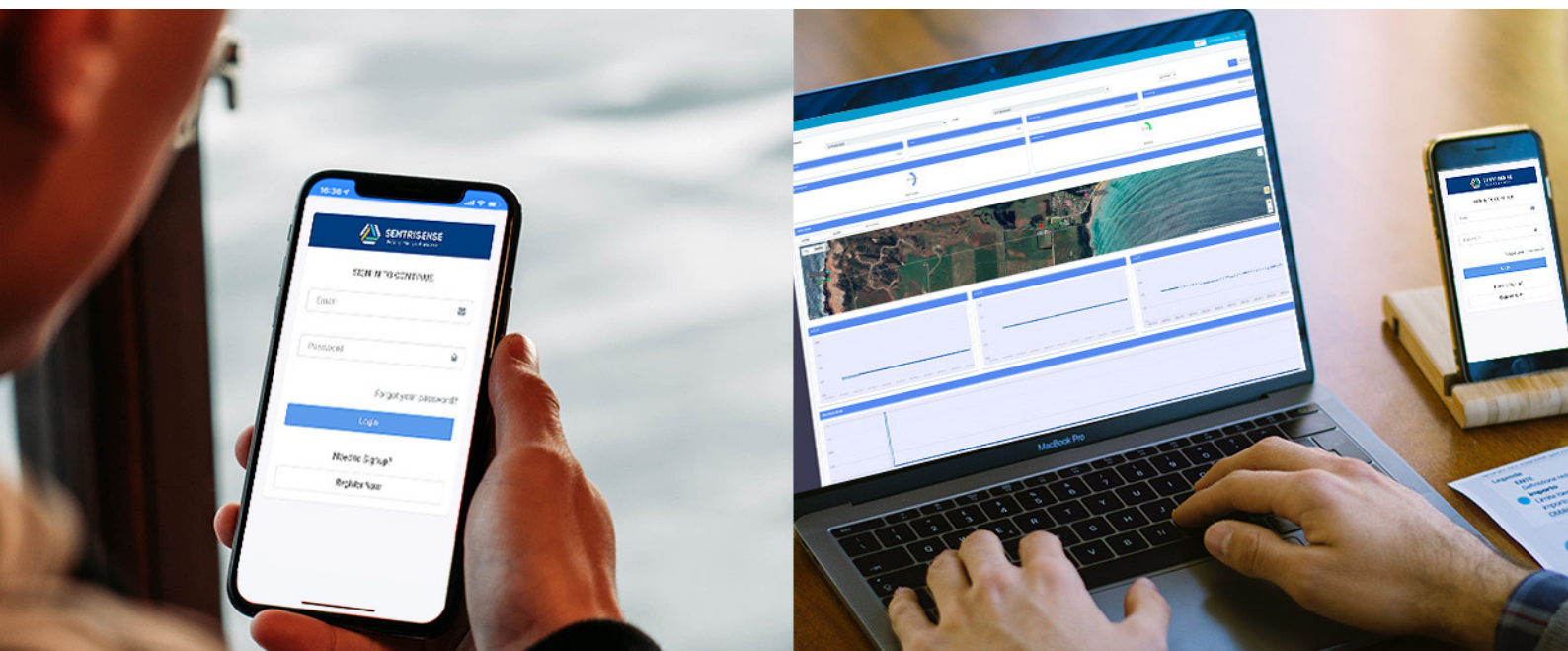
Strong winds are responsible for different sorts of grid failure, as well as bushfire generation. Sentrisense® line guard is able to detect the movement in the line due to strong winds. Once this condition is detected alerts are immediately generated. By monitoring the movement of the cable by strong winds, an alert can be generated if the cable movement is too strong, enabling DSO and TSO to preventively disconnect the grid in the affected area to prevent the bush fire.



Line capacity

Today, due to the increased adoption of renewable energies, there is a change in the user's paradigm. An user can now be a provider as well. Residential and industrial customers connected to the grid are sending energy back, adding complexity to the grid management. Also, demand is increasing while infrastructure remains the same. So there is a need to move to enhanced load models. By building an ampacity model it is possible to inform the load status of the line to either increase or decrease the power delivered.





— Web Platform

Sentrissense Cloud

- Alerts based on flexible algorithmic conditions.
- Secure access through computer, smartphone or API.
- Open API for integration with third party systems.
- Configurable alerts for each variable.
- Dispatch of alerts through email or SMS.

Advantages of Sentrissense Technology

- Simple to use devices that are calibrated and configured automatically.
- Remotely adjustable configuration parameters for fine tuned application operation.
- Robust device constructions for use in harsh and remote environments.
 - IEC 61284 Ed.2:1997, CISPR TR 18-2 Ed.3.0:2017, Corona free up to 284kV.
- Wind Tunnel testing successfully for winds up to 200km/h.
- Cost effective and easy to install.



**Do you want to know more about
how our technology can help you?**

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