



RADIO
FREQUENCY
SYSTEMS

Case Study

Connectivity to Support Green Energy in Italy

Italy

Enel Green Power, a global leader in renewable energy, operates over 1,300 power plants across five continents. For their Presenzano site — Italy's largest and Europe's second-largest hydroelectric facility — Enel Green Power needed to upgrade its communication infrastructure to support both mission-critical and commercial frequencies inside a curved ring tunnel encircling the dam's central lake.

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The challenge

Traditional communication systems at hydroelectric facilities often rely on antennas, which work well in short, linear tunnels. However, the Presenzano dam posed a unique challenge: the tunnel running around the central lake was a circular tunnel spanning a significant distance. The existing antenna-based approach was insufficient for maintaining strong and consistent signal coverage throughout the tunnel's full perimeter, especially at higher frequencies needed for operational and commercial applications.

The solution

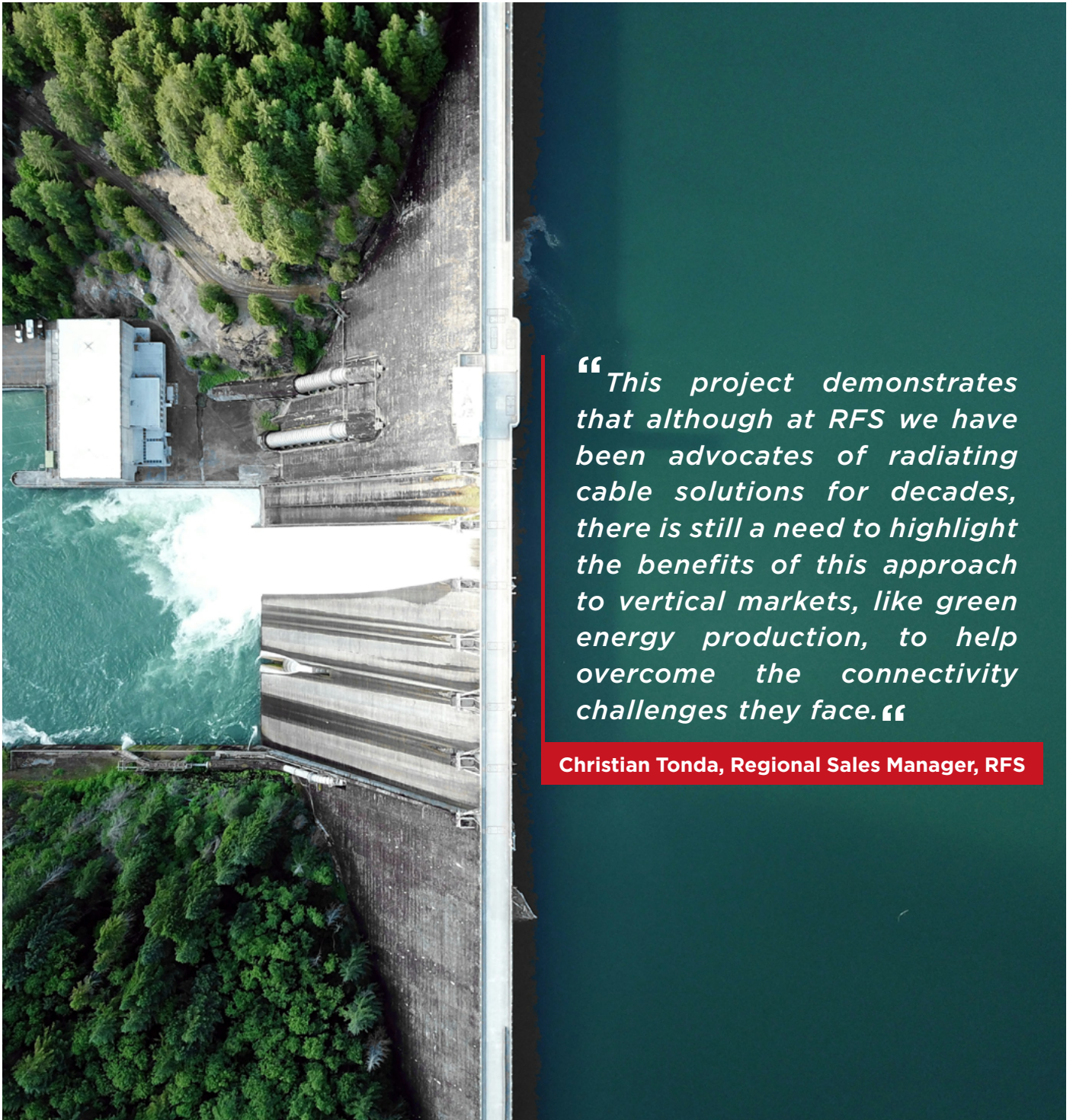
In collaboration with an integrator partner, RFS was able to design and supply a RADIAFLEX-based solution. RADIAFLEX radiates RF coverage across the entire length of the cable to deliver contoured coverage that overcomes many of the challenges associated with in-tunnel coverage.

A total of 3,100 meters of RLKX114-50CPR were installed within the ring tunnel to cover commercial and mission-critical frequencies up to 3.8GHz.

The radiating cable solution was fitted to the walls of the tunnel's curved structure, ensuring uninterrupted signal propagation along its entire length. The cable also met the highest CPR standards to ensure the safety of staff and emergency personnel in the event of a fire.

The result

The deployment was completed successfully, delivering excellent signal coverage across the full tunnel circumference. Following on from the success of the project, the customer is now in talks with RFS to replicate the RADIAFLEX-based solution in other hydroelectric basins throughout Italy and beyond.



“This project demonstrates that although at RFS we have been advocates of radiating cable solutions for decades, there is still a need to highlight the benefits of this approach to vertical markets, like green energy production, to help overcome the connectivity challenges they face.”

Christian Tonda, Regional Sales Manager, RFS



Lifetime Connectivity

At RFS we specialize in the design and manufacture of premium, future-ready cable solutions for customers across the globe. With over 120 years of heritage in the industry, we build reliable and long service life connectivity systems. **Because we care about our collective future.**

- We design innovative cable solutions that deliver best-in-class connectivity while tackling network pain points and offering a lower Total Cost of Ownership.
- We bring passion and expertise at every stage, from R&D to installation, to meet our business partners' expectations.
- We deliver the communications foundation for digital transformation across a range of industries including oil & gas, mining, and rail.
- We are changing the perception that all cable is created equal and demonstrating the potential of premium solutions.
- We offer a dynamic and stimulating working environment that promotes diversity and fosters personal and collective accomplishments.
- We are committed to sustainability with greener manufacturing processes and designing long-life equipment with low-energy consumption to support our customers' climate goals.