Vestitel

SEMTECH®

LoRa®

Ensuring Reliable Gas Supply and Increasing Infrastructure Safety

As gas utilities face rising demand and aging infrastructure, Bulgaria's Overgas is leading a digital transformation by replacing 100,000 analog meters with smart meters powered by Semtech's LoRa® devices and the LoRaWAN® standard. Through its subsidiary Vestitel, Overgas is deploying a nationwide low-power IoT network to improve safety, efficiency and billing accuracy, while also laying the groundwork for broader smart city applications across Bulgaria and Greece.

QUICKFACTS

Company
Vestitel
vestitel.bg

Customer Profile
Vestitel BG JSC is a leading Bulgarian connectivity provider specializing in high-performance telecommunications services. Operating under the ownership of Overgas Inc. AD, the country's largest private natural gas company, Vestitel offers an extensive Nx100G optical network spanning over 3,000 km across Bulgaria and Greece. With more than 40 points of presence, the company delivers a comprehensive suite of services, including Ethernet, IP, dark fiber and colocation, to telecom carriers and business clients. Vestitel is also at the forefront of the Internet of Things (IoT) sector, deploying large-scale smart infrastructure projects such as smart gas metering systems and is a member of the Bulgarian Association of Natural Gas (BANG).

Objectives
- Remotely monitor gas meters across 40 cities.
- Replace over 100,000 analog gas meters with smart technology.
- Increase infrastructure safety.

Results
- Increase visibility of energy systems and improve quality of service.
- Reduce household energy consumption.
- Battery life up to 10 years.

Products and Services
- LoRa delivers low-power wireless technology.
- Nationwide LoRaWAN network coverage.
- Wirelessly connected sensors communicate data to the Cloud.

> Our topline goals are to increase the reliability of natural gas supply and ensure the safe operation of the gas distribution network. By incorporating a high level of automation and control mechanisms, we will be able to measure and optimize every part of Overgas' system.

Valentin Velichkov,
CEO at Vestitel

INTRODUCTION

Transforming gas utilities with smart metering

With the demand for natural gas on the rise and millions of miles of aging distribution infrastructure needing to be maintained, utilities are looking to the Internet of Things (IoT) to digitally transform the industry. Smart metering technology, combined with sensors for smart valves, gas pressure and gas leak detectors on the same network, are allowing gas utilities to improve overall efficiency and enhance safety.

According to a recent survey by Report Ocean, the global smart gas meter market is expected to reach $5.99 billion by 2027 – up from $3.71 billion in 2019. This rapid transition from conventional manual reading to smart meters allows utility companies to remotely collect accurate customer usage measurements. The evolution to Advanced Metering Infrastructure (AMI) initiatives is producing accurate and timely invoicing, improving customer satisfaction and encouraging waste reduction by consumers.

Additionally, real-time and historical data from smart gas meters enable gas utility companies to efficiently manage their operations, including energy production, distribution and delivery, while reducing costs and optimizing resource allocation.

To support and expand AMI, gas utilities are deploying low-power wide-area networks (LPWANs) as a connectivity backbone for the meters and sensors. With LPWAN technology, such as Semtech's LoRa® devices and the LoRaWAN® standard, utility companies can more effectively measure usage data and trends wirelessly and without manual intervention in urban environments, rural areas, indoors and even underground. These networks are built with abundant capacity and establish a foundation that can be utilized for a variety of other municipal IoT applications.

CHALLENGE

Bulgaria goes all in on smart metering

Overgas is Bulgaria's largest private natural gas company, delivering service to 80,000 households and 3,000 business customers through its 2,500 kilometers of pipeline. Vestitel, a subsidiary of Overgas, provides a wide range of high-quality connectivity services to international and regional telecom operators, business customers and end users throughout Bulgaria and Greece.

> " We chose LoRa® because it is a proven technology that has emerged as the global standard for LPWAN connectivity. The long range performance and low power consumption of LoRaWAN and amazing battery life of LoRa-enabled devices are ideal for smart metering and smart infrastructure applications. "
>
> **Valentin Velichkov,** *CEO at Vestitel*

In 2019, Overgas gave Vestitel the opportunity to develop and manage a comprehensive project called Doverie. The objective of the project is to upgrade Overgas' gas delivery and billing systems, including the replacement of its entire fleet of analog gas meters with smart meters.

IoT Challenge

- Remotely monitor gas meters across 40 cities.
- Replace over 100,000 analog gas meters with smart technology.
- Increase infrastructure safety.

SOLUTION

To begin, Vestitel researched different connectivity options and selected Semtech's LoRa devices and the LoRaWAN® standard.

Devices integrated with LoRa and the LoRaWAN standard are differentiated by an open ecosystem, strong security specifications, bidirectional communication, optimization for mobility and scalability for capacity. The architecture of the LoRaWAN standard is a fault-tolerant and redundant platform designed to connect hundreds of thousands of low-cost, battery-operated sensors over long distances and in harsh environments that have been too challenging or cost-prohibitive for cellular or local area network (LAN) technologies.

The success of LoRa in LPWAN-based IoT applications speaks for itself: IoT networks based on the LoRaWAN standard are currently deployed in 173 countries with an ecosystem supported by hundreds of contributing members of the LoRa Alliance®, an open, nonprofit association with the mission to support and promote the global adoption of the LoRaWAN standard.

LoRa Technology Used

- LoRa delivers low-power wireless technology.
- Nationwide LoRaWAN network coverage.
- Wirelessly connected sensors communicate data to the Cloud.

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BENEFITS

A foundation for the future

Vestitel leveraged members of the LoRa Alliance to build its state-of-the-art LoRaWAN network, supporting M-Bus and DLMS metering standards, across the entire territory of Bulgaria and Greece. A strategic partnership with OrbiWise, a leading provider of advanced technologies for the IoT industry, is responsible for connecting and deploying several hundred gateways and 100,000 gas meters manufactured by GoldCard Smart Group Co. through the end of 2025.
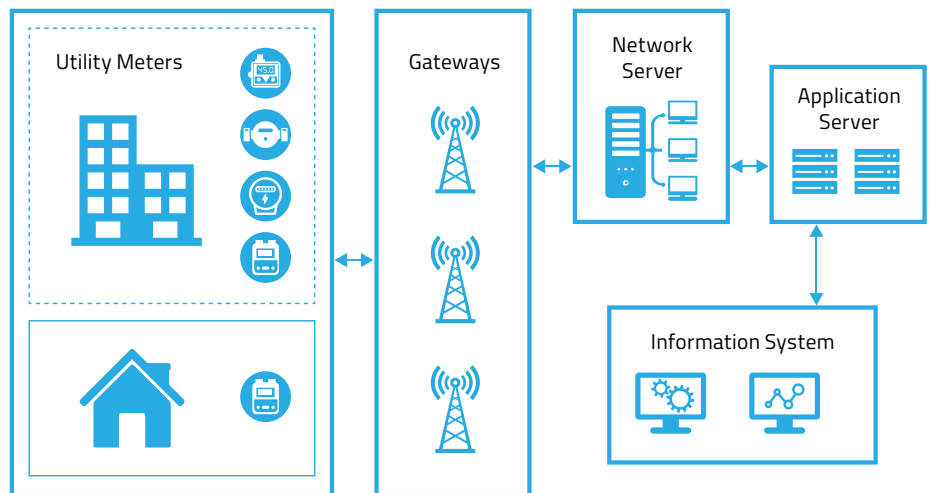
Vestitel has already deployed smart metering in Sofia, Bulgaria's capital and six other cities across Bulgaria and Greece, including Thessaloniki. In addition to smart metering, LoRa is providing critical measurements for gas pressure and temperature, as well as leak detection and malfunction notifications. When an anomaly appears, Overgas can shut off valves remotely and dispatch technicians for evaluation and repairs.

The Overgas rollout is being expanded to over 40 cities across Bulgaria and Greece. At the same time, Vestitel is piloting projects for other operators and service providers including water metering, smart lighting, smart manhole covers and smart parking to leverage its shared LoRaWAN® network.

Business Value

- Increase visibility of energy systems and improve quality of service.
- Reduce household energy consumption.
- Battery life up to 10 years.

HOW IT WORKS:

Utility Meters | Gateways | Network Server | Application Server | Information System

About Semtech
Semtech Corporation (Nasdaq: SMTC) is a high-performance semiconductor, IoT systems and cloud connectivity service provider dedicated to delivering high-quality technology solutions that enable a smarter, more connected and sustainable planet. Our global teams are committed to empowering solution architects and application developers to develop breakthrough products for the infrastructure, industrial and consumer markets.

To learn more about Semtech technology, visit us at **Semtech.com** or follow us on **LinkedIn** or **X.**