

Gridstream Solution
Advanced Metering Management system

**Landis
Gyr+**
manage energy better



Gridstream AIM

The most comprehensive
energy management system

 **Gridstream**



Improved energy management with Gridstream

- We focus on the unique needs of energy utilities
- We offer tailored solutions and environmental efficiency
- Our technological leadership enables the smart grid

With 25 years of experience in the Advanced Metering Management (AMM) solutions business, Landis+Gyr is the world's most committed and competent AMM solutions and services provider as well as the recognized global leader in the metering business. Serving the energy industry has always been our core business. During decades of cooperation with energy utilities we have gained a unique understanding of your business requirements. Now we have developed and packaged our advanced energy management products and services under a new solution suite, Gridstream.

Customised intelligence

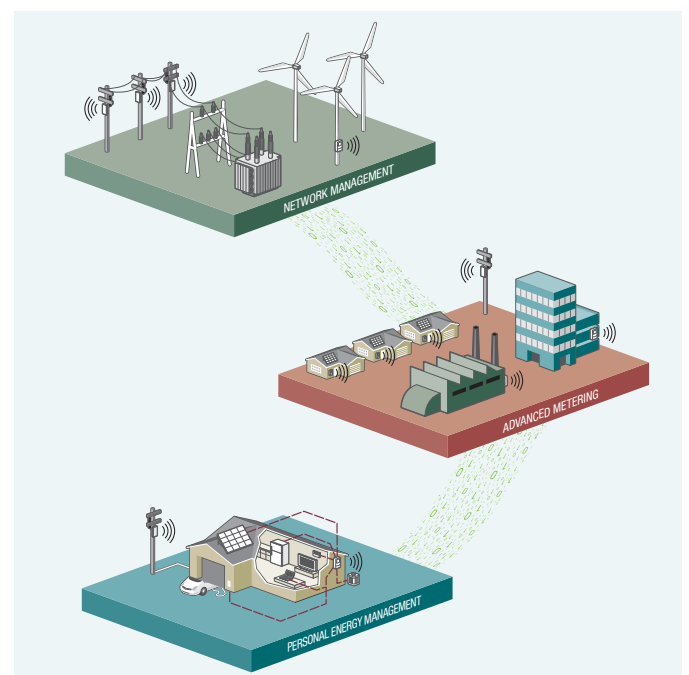
In order to increase profitability and efficiency, you need more than just Automatic Meter Reading (AMR); you need an AMM solution that enables the smart grid. The Gridstream AMM solution is tailored to your unique needs so that you can achieve better results and the best return on your investment. Our strong commitment to AMM benefits your company – we are here to help you manage energy better.

Your innovative partner

We are committed to developing long-term customer relationships and to providing you with trustworthy solutions that grow with your business and help you to advance at the speed of technology. We want to be the experienced partner that moves the industry towards the smart grid, delivering positive outcomes for you, your customers and the environment.

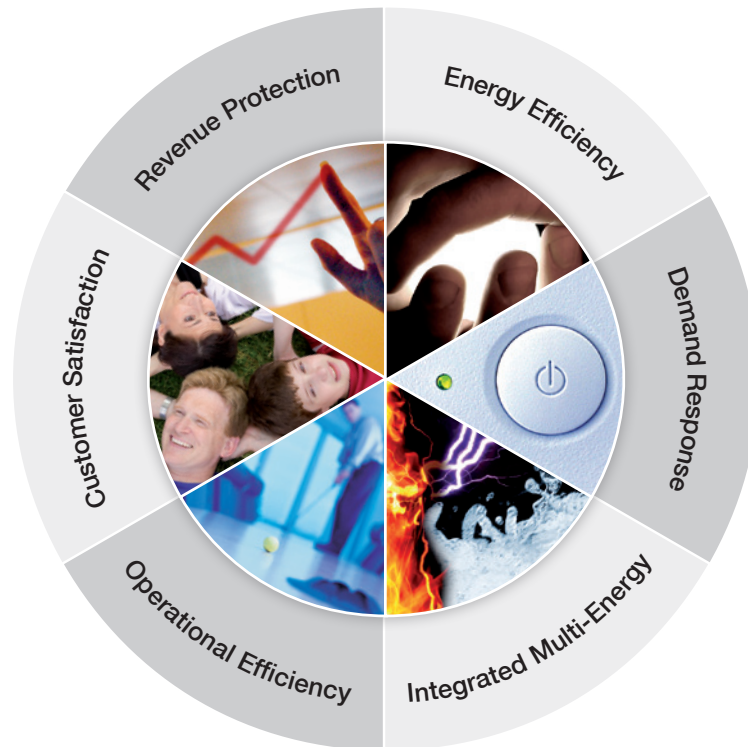
Sustainable awareness

We want to support you to manage energy better and realise smart grids. Advanced metering, network management and personal energy management improve efficient use of energy resources and support sustainable development. Our smart metering solutions enable you to provide consumers with fully transparent information regarding their individual energy consumption, which increases their awareness of sustainable behaviour. We at Landis+Gyr are also committed to managing our own energy usage better and demonstrating our green initiative throughout all our operations.





Six reasons to choose the Gridstream AMM solution:



Energy efficiency

Give your customers precise information that enables them to use energy in a manner that is more beneficial to the environment. Provide them with advanced personal energy management tools. Improve your network management and help your customers save energy by raising the awareness of their energy usage.

Demand response

Forecast demand accurately with your new insight into consumer behaviour. Peaks can be leveled out, and consistent supply can be attained.

Operational efficiency

Save money and give your customers a better service with the increased operational efficiency and process quality that comes with automation.

Integrated multi-energy

Realise the efficiency benefits of integrating the processes used in operating, monitoring and managing multiple energy forms. Our Gridstream solution works for electricity, heat, gas and water. Efficiency is increased as there is only one system to use, train on and maintain.

Customer satisfaction

Increase your customers' loyalty to you and create growth opportunities through more precise, consumption-based billing and quality customer service.

Revenue protection

Reduce your non-technical losses and identify theft with the wide range of advanced tools provided by the Gridstream solution. You can remotely switch power supply on and off, improve debt collection processes and respond quickly to abnormalities which may threaten revenue.



Advanced technology to meet your needs today and tomorrow

- **A solution customised to your needs**
- **Technology that grows with you**
- **Cost effective design**

Gridstream helps you maximise the effectiveness of your energy management assets through the seamless integration and flow of technology and information. It packages the industry's largest portfolio of energy management tools into an interoperable and secure AMM solution.

At the heart of our Gridstream solution is the advanced software, Gridstream AIM. It enables the expansion of smart metering towards smart grids. Besides advanced multi-energy metering, it provides tools for network management support and personal energy management. Gridstream AIM makes all multi-energy consumption data available in a single AMM system, covering electricity, heat/cold, gas and water.

The system supports network management by improving the awareness and information of the network status and

enabling load management by shaping the load curve and preventing overloads. Personal energy management engages your customers by giving them unique insight and control of their household energy consumption. Gridstream AIM is developed in an open architecture for ease of integration with existing utility software and data management systems.

Value creation process

A truly flexible solution, Gridstream can address all of your energy needs in one complete energy management solution. Or, you may deploy individual products or components and integrate them into your existing infrastructure. Based on our wide range of experience, we have developed a systematic process model where we together define your specific needs and the optimal way for you to implement AMM.

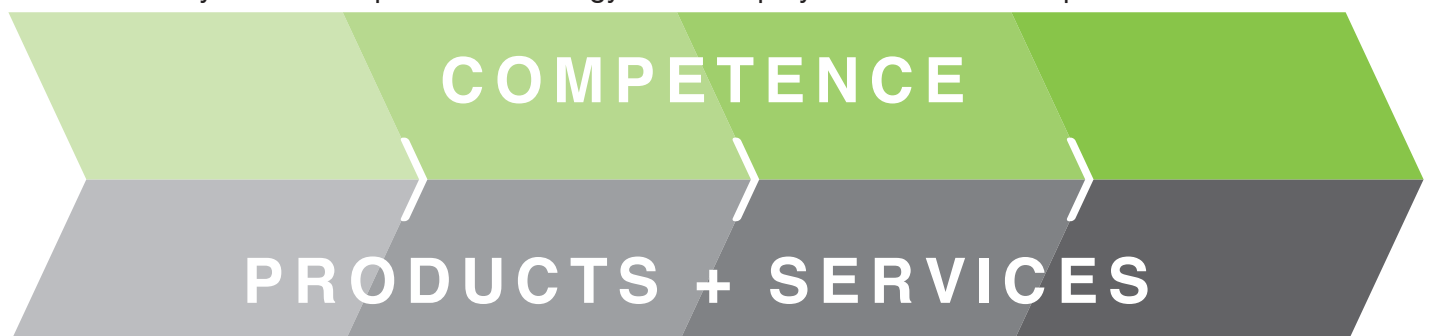
Four steps to an optimal solution

1. Customer needs analysis

2. Solution design with proven technology

3. Reliable deployment

4. Dependable operation





Customer needs analysis	Solution design	Reliable deployment	Dependable operation
<p>When first discussing the deployment of an AMM system a thorough study of a utility's needs must be undertaken. Our in-depth knowledge of utility processes and our strong local experience allow us to see the big picture. Our joint expertise will produce the ideal solution to your specific needs.</p>	<p>After the needs analysis we use the findings to compose the correct solution for you. From providing hardware to operating the entire AMM system, we have the perfect solution to meet your requirements, securing your investment for years to come.</p>	<p>Successful deployment is key for successful AMM operations. We have the tools to carry out the project on time and within budget. Accurate and flawless information flow is vital during deployment. Our vast experience and references show that we have the right tools to ensure a fast deployment while maintaining the highest quality.</p>	<p>At Landis+Gyr, we are dedicated to serving your needs during the system operation. Our extensive range of services includes training and system updates. We can ensure a prompt response in your own language thanks to our local presence in your market. Additionally we can partly or fully run your metering operations, according to your needs.</p>



Gridstream AIM – designed to enhance your processes

- **Advanced smart grid functionality goes beyond AMM**
- **Automated processes improve efficiency**
- **Interoperable and future proof technology**

Gridstream AIM offers a multi-energy AMM software that is fully integrated and easy to manage. It has been designed to provide you with all the functionalities you need in order to manage your energy better and to enable the smart grid.

The advantages of using an integrated AMM system streamline your processes and make them more efficient. We help you maximise the effectiveness of your energy management assets through the seamless integration and flow of technology and information. Gridstream AIM helps you save on everything from operational costs to workload. By having all your information in one place, your staff will be trained on only one system to manage all of your processes. With numerous automated processes and functions, let Gridstream AIM do the work for you.

Our technologies offer operational advantages to utilities. This translates into value added services for end-consumers. Consumers receive clear and precise bills, prompt customer service and readily available online information. Accurate information empowers the customers to use energy more efficiently.

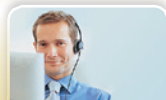
We build our solutions on openness and flexibility. Gridstream AIM is based on standards that enable interoperability, providing seamless integration and flexibility also for future growth needs.





Utility processes

Easy access to data enhances many of the utility processes



Customer Service



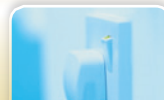
Billing



Information Management



Balance Settlement



Network Functions

AMM Software: Gridstream AIM

Gridstream AIM stores and prepares metering information for viewing, reporting or use in other applications.

An AMM software for efficient data collection, processing and management

Gridstream AIM

Data transfer

Data is transferred into the Gridstream AIM-system using cost efficient methods.

GSM/GPRS

Ethernet

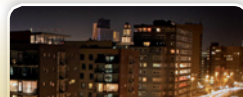
PSTN

Low voltage powerline

Medium voltage powerline

Customers

Our range of products offers metering equipment for all customer segments.



Multi-energy residential metering



Industry and commercial metering



Grid metering



Gridstream AIM in every step of the metering value chain

- One system covers all functions and energy forms
- Monitoring and management tools for energy companies
- Monitoring tools for consumers

Reading and Control – real-time energy management

The versatile and flexible reading and control capabilities in Gridstream AIM form the backbone of an efficient metering system. It provides a basis for all other value added services such as billing, balance and customer reporting and network management.

Additional benefits include:

- Data retrieval according to schedule or on demand
- Remote data retrieval
- Traceable data flow
- Comprehensive reading management tools
- The possibility to simplify and automate business processes
- Remote management of tariffs, loads, relays and power supply

Validation – always reliable data

Validation in Gridstream AIM checks the quality, validity and reliability of metering information at an early stage enabling you to react immediately to any abnormalities.

This enables you to monitor and react to conditions such as consumption limitations or invalid data.

Validation is a flexible platform that is equipped to handle future validation requirements.

Profile Calculation – flexible profiling

Profile Calculation produces a series of data using different calculation rules based on existing information. Profile Calculation is a highly flexible and efficient tool. It prepares data for balance settlement and load profile follow up. The calculated data can then be used as a basis for tariff planning. The tool can be applied to all energy forms. With profile calculation, you can change the periodicity and convert profile metering to various time profiles or calculate temperature compensated profiles.

Tariff Calculation - total freedom in tariffing

Tariff Calculation in Gridstream AIM provides you with refined and reliable data for multiple purposes in billing and new tariff planning. It also enables flexible tariffing, even afterwards. Tariff calculation can be used to simulate and accurately forecast the effects of different tariffing types. As the calculation suits multi-energy solutions, there is no need for multiple systems.



InSight – advanced monitoring tool

InSight is a tool used for proactively monitoring system hardware, applications, services and databases. The metering value chain can be managed with ease due to fast access to current monitoring data. InSight brings all the information within Gridstream AIM together in a visual, easy to use form. It enables you to finetune the general performance level of the system or locate bottlenecks.

InSight uses modern web services and portal based architecture. The portal approach provides a clear and visual interface that can be customised to best suit your needs. Data for monitoring is collected through probes which gather information from different parts of the system. It is then stored in the InSight database and unified. The InSight engine also preprocesses the data for quick viewing and graph display.

Integration - seamless data flow

Reliable and real time data exchange between different systems is a key factor when aiming for cost efficient data management for the entire metering value chain. This occurs when high quality two-way integration becomes a necessity. Integration application (AIMIA) is a flexible integration tool that offers data exchange services for integration needs. It enables reliable data flow simultaneously between Gridstream AIM and various systems, such as Customer Information System (CIS), Energy Data Management System (EDMS) and Network Information System (NIS). Using this application ensures that data is constantly updated, readily available and stored in only one place.

Site Manager – automating deployment

Seamless data flow during AMM deployment is crucial for accuracy and data security. The key to a successful AMM deployment is ensuring a smooth roll out phase. Site Manager is a planning and data gathering tool which provides quick and easy handling of installation information. Site Manager includes two user interfaces: one for installation planners and network users and PDA access for service personnel.

Dashboard – a user-friendly system overview

Dashboard ensures that consumer and sales information is easily available, bringing benefits to customer service and managers alike. Dashboard gives access to a vast amount of metering information stored in the Gridstream AIM database. It is a user-friendly, web-based application that requires no previous knowledge of Gridstream AIM. It offers different views for different user groups, such as customer service personnel or executive managers. Dashboard improves many of the network company's key processes:

- Efficient customer handling
- Efficiency in handling changes of supplier
- Quick responses to billing enquiries
- Easy tracking of power cuts and power quality information
- Efficient debt collection through remote access
- Variety in network company service offering with remote relay options



Maximise AMM efficiency

- Hybrid communication solution for lowest lifetime cost
- Single system for managing multiple energy forms
- Extremely reliable metering equipment for peace of mind

Gridstream AIM uses the communication technologies that suit you best. Currently data transfer can be carried out using GSM/GPRS, Ethernet, PSTN or PLC. To achieve an optimal, cost efficient solution for a metering segment or geographical location you often need to combine different data transfer methods. When it comes to developing new methods of data transfer, we at Landis+Gyr are at the cutting edge, while at the same time using standardised communications, such as IP protocols to ensure full interoperability.

Gridstream AIM provides significant potential for improving efficiency in multi-energy utilities. Implementation of a single system to read multiple energy forms streamlines processes and reduces operational costs.

Timeless quality

Our range of products represents the highest quality in AMM. We produce smart multi-energy meters that are not only accurate and functional, but also reliable and extremely durable. These traits ensure an optimal lifecycle cost for all our metering products. Our high quality standards mean that we can offer our customers peace of mind throughout the lifetime of our product.

Landis+Gyr meters are compact, lightweight and easy to install. Their durability and remote data transfer capabilities minimize the need for on-site visits. This makes them convenient and saves time, effort and resources.



Personal energy management – revolutionising consumer communication

- Enabling energy monitoring and management at home
- Enabling you to promote demand response
- Educational and informative for consumers

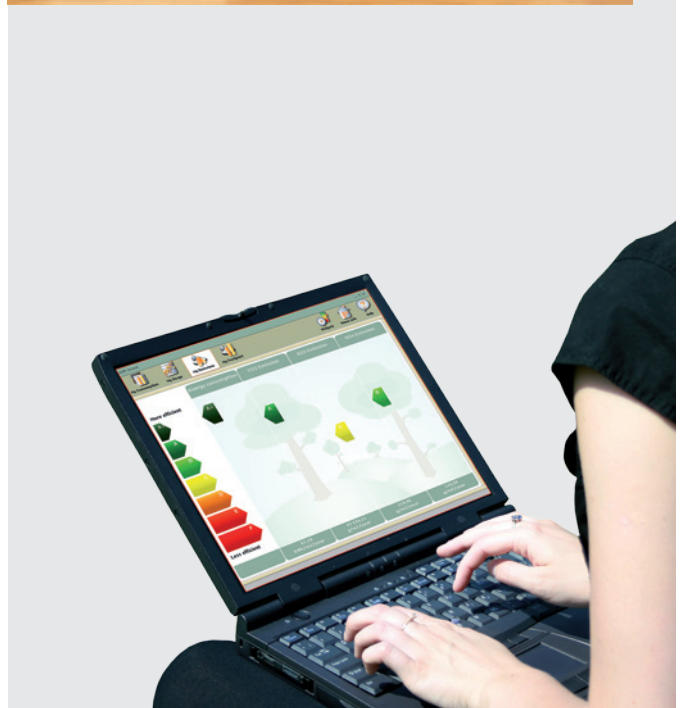
Empowering the consumer

The increasing environmental concerns and growing interest in environmental sustainability have opened consumers' minds to new ideas.

As part of its Gridstream solution, Landis+Gyr offers applications that enable households to monitor and manage their energy consumption. EcoMeter is an in-home device that shows the real-time information needed for energy consumption management. Consumers could also have software on their PC, showing the personal usage details online. In both applications, actual information regarding the electricity, gas and water consumption as well as current tariff rates and demand are available for the consumer – for the first time. Awareness of consumption rates increases the consumers' incentive to change their consumption patterns and to contribute to environmental sustainability.

Interactive communication

The applications for personal energy management enable you to set up a direct communication channel with consumers. You can monitor consumer behavior and develop new ways of dealing with peak demand management. Increased energy consciousness among consumers efficiently levels peaks and supports in optimizing the network load. The applications enable you to promote demand response, as you have the ability to encourage consumers to reduce their consumption at critical times or in response to high electricity prices.



Manage energy better

Landis+Gyr is the leading global provider of integrated energy management products tailored to energy company needs and unique in its ability to deliver true end-to-end advanced metering solutions. Today, the Company offers the broadest portfolio of products and services in the electricity metering industry, and is paving the way for the next generation of smart grid.

Landis+Gyr, an independent growth platform of the Toshiba Corporation (TKY:6502) and 40% owned by the Innovation Network Corporation of Japan, operates in 30 countries across five continents, and employs 5,000 people with the sole mission of helping the world manage energy better.

More information is available at www.landisgyr.com.

Landis+Gyr in short

- 5000 employees worldwide
- Operations on all five continents
- Broadest portfolio of products and services in the industry
- 25 years of smart metering experience
- 1000 AMM systems delivered
- 300 million energy meters produced
- Largest relevant engineering capacity in the industry
- 65 years of direct load management experience
- 25 million load management receivers produced
- ISO certified for quality and environmental processes
- World leader in integrated energy management solutions
- Committed to improved energy efficiency and environmental conservation
- Solid and established partner network

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