

ENERGY manager

Newspaper for energy suppliers



Energy Cloud makes decentralized energy supply secure and economical

Platform for Controlling Multimodal Energy Systems

User Report

Open Grid Europe GmbH introduces a new schedule management system

Lean Processes in Schedule Management

News

DB Energie puts its faith in PSI wireless routers across the board

Intelligent Network Connection

News

Successful commissioning of the PSImarket energy trading system at EHA

Portfolio Management for the Electricity and Gas Markets

EDITORIAL

Dear readers,

Climate agreements help to limit global emissions. At the climate cabinet meeting of the federal government, the CEO of the German association for gas and water (DVGW), Prof. Dr. Gerald Linke, emphasized the vital role of hydrogen and natural gas as energy sources of the future. Intelligent coupling and energy storage solutions enable synergies of the three energy sectors of electricity, heat and transport to be exploited with gas as an energy source. The federal government has committed itself to harnessing existing gas technologies on a large scale and helping them to reach comprehensive marketability. Increasing energy efficiency in all sectors is another important stepping stone toward attaining climate protection targets. The federal govern-



ment's energy policy consists in the political will to exploit economically viable energy efficiency potential within companies.

Existing PSI products support the efficient use of energy in all sectors. Comprehensive knowledge about the physical, regulatory and economic aspects to be considered is given as support for decisions involving the use of energy, network planning and operational management of multimodal energy grids.

The use of key IT technologies, such as the Internet of Things, Big Data and Blockchain, allows safe decisions to be made for stable and efficient energy management, even in highly dynamic feed and supply processes.

In this regard, PSI customers benefit from our expertise in individual sectors and from excellent IT knowledge which ensures safe and reliable products by virtue of company-wide technology convergence.

Take a look at our new website at www.psigasandoil.com.

Dr. Simone Bauer Reinhold Bösel
Divisional Management Board
PSI Energy Gas & Oil

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Energy Cloud makes decentralized energy supply secure and economical

Platform for Controlling Multimodal Energy Systems

In order to transform the energy industry, sector coupling is a key technology on the path toward the goal of climate neutrality. Sector coupling interconnects the electricity, gas and heating networks and the mobility sector, and offers far-reaching potential for flexibility and decentralization in the energy supply system. Acquiring the necessary data and the system control for exploiting this flexibility are new challenges for established energy supply companies.

Energy suppliers at the transport and distribution network level have well-developed instrumentation. In order to ensure supply security at today's very high level, large amounts of data are recorded and analyzed using energy management systems.

This data relates to assets of the actual energy infrastructure, such as cables, pipes, operational materials, the infeed/outfeed behavior at transfer points, the origin of energy sources, load and flexibility profiles, and the composition and state of energy sources in pipe-bound transport. The wholesale trade of energy and energy-

related commodities is carried out by means of a mature and well-established system together with the corresponding data and IT applications.

New island networks require additional control instruments

Maintaining an energy balance and economically operating the island networks newly established on the market requires an additional perspective on data as well as extra control instruments. Island networks are multimodal energy systems that have a substantially equal energy balance and can be coupled to one another and to a basic supply. Fast-acting op-

erational materials must be used to react quickly to short-term changes to supply and load, to ensure stable system operation and to guarantee a balanced net output at all times. In this decentralized supply system, new applications must also be provided for displaying contracts and assets for energy trading.

PSI Energy Cloud provides a platform upon which these energy systems can be operated reliably and economically. An open and flexible approach can provide an effective response to uncertainties in future design, for example, due to the regulatory framework, the situation regarding raw materials and the openness of technology.

Parallel and coordinated planning of all energy infrastructure

Energy Cloud uses a service-oriented, modular application structure to support parallel and coordinated plan-

ning of all energy infrastructures. The entire energy value chain can be modeled using a BPMN tool (business process model and notation) and an end-to-end solution can be provided on the basis of highly specialized PSI solutions from the gas, electricity, heat, water and mobility sectors.

Performance and security

Flexibility options in the energy supply system can be identified and assessed by any participating company, and can be exploited for optimum operation of their own plants or

made available to other market partners. This allows all participants to achieve maximum security and revenue potential.

PSI Energy Cloud offers all the advantages of an industrial IoT platform: hosting the core applications, unlimited connectivity between individual services, connectivity with business partners and all linked devices, as well as the ability to integrate apps using defined standards. PSI's Telecontrol Gateways additionally support the preprocessing of data directly in the field.

What's more, decentralized solutions can be integrated with local measurements to guarantee decentralized—and thus very fast—network operation. The transfer of data from the decentralized solutions to the central SCADA, schedule management and

trading applications can thus be kept to a minimum.

The less information moved back and forth, the lower the risk of compro-

optimization, and for monitoring the quality of operational materials.

The operational objectives are to reduce operating costs while increasing



A platform for controlling multimodal energy systems.

misiting its integrity. Edge computing means that the effects of potential faults on highly critical energy infrastructure are not only locally limited, but they can also be quickly located and efficiently resolved.

AI-based applications support digitalization

Energy Cloud also unlocks the full potential of the IoT in the energy sector. PSI works with customers to develop solutions that enable advanced AI-based analyses to be used for the digitalization of the energy supply system. The software solutions PSIsaso (security assessment and system optimization), PSIGasguide (determination of an optimal mode of network operation) and PSIngo (intelligent grid operator) are examples of AI-based applications for transfer and utilization

the availability and security of energy infrastructure. Loss-making areas—caused by wasted energy, equipment failures and problems affecting supply security—can be quickly located. Identifiable CO₂ emissions for the production and transport of energy can be determined and reduced by means of optimization.

Summary

The PSI Energy Cloud provides a powerful solution portfolio that enables energy throughput to be optimized in a multimodal energy system and objectives to be achieved in the areas of supply security, climate protection and economic efficiency. ☺

PSI Software AG

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News: Extended standard functions and increased configurability

New Software Release PSIcontrol/Gas 7.9

PSI is currently offering the new release 7.9 of the upgradable standard products PSIcontrol/Gas, PSIGanesi Online Simulation and PSIREKO for rollout. The standard functions have been extensively expanded and the configurability and flexibility of the user interface increased.

Support for the use of large displays and the possibilities for specifically configuring user interfaces has been improved. The dark theme mode is also new; with this, dispatchers, especially on night shift, can obtain information quickly and securely.

Cloud operation

A group of objects can now be more individually allocated to an archiving horizon. In this way, storage resources can be better allocated and used as

Added value for dispatcher

The online simulation PSIGanesi offers attributes of temperature tracking in the 2-layer storage model and thus allows a more precise mapping of temperature curves in pipes underground. This increases the accuracy of the gas network content and gas network buffer.

The new pig display in the world view allows a faster recognition of pig positions based on the topological and geographical reference. Improved methods and operation for pig tracking

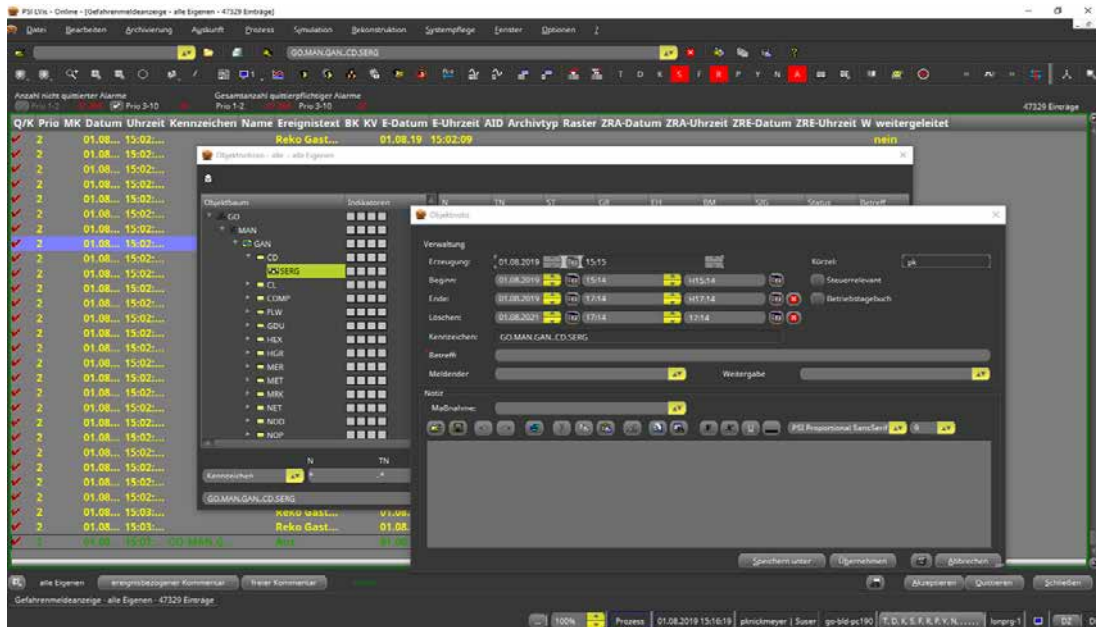
path finding in parallel and strongly intermeshed line sections in the locus curve representation.

The extension of the gas composition

The new functions at a glance

- Large screen
- Dark theme mode
- Cloud operation
- Gas network buffer
- Pig display
- IT security

reconstruction offers a clear representation of the measurement data transmitted from a connected accounting system.



In dark theme mode, important information can be captured quickly and safely, especially at night.


needed. A remote telecontrol connection is provided as an option for the standard, which can be parameterised in master data maintenance. This enables operation in the cloud.

allow automatic determination of pig positions based on pressure fluctuations.

The inclusion of current switching states and flow situations simplifies

Support of current security requirements

The new release was tested successfully at a first customer site and is ready for the takeover into productive operation. The rollout takes place with an update of the used third party software and supports the fulfilment of

the current security requirements. 

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User report: Open Grid Europe GmbH implements a new schedule management system

Lean Processes in Schedule Management

The dispatching process of a large transmission system operator involves exchanging lots of information with customers and neighboring network operators every day. Customers nominate their transport quantities at major transfer points and the network operator ensures frictionless transport by means of control measures in its own network and via the cooperation of network operators. The new PSI-delivered IT system in the schedule management system supports the standardized and largely automated use of the capacity instruments required for this purpose.

Changes in the energy market can also be clearly seen in the dispatching center of Open Grid Europe GmbH. Increasing complexity and a simultaneous need to cut costs has led to a reassessment of the IT systems used. However, simply replacing an IT system only realizes minimal cost potential if the technical processes to be supported are not fundamentally reviewed and optimized.

a schedule management system (SMS) was then started.

In October 2019, as the final components, two IT products were replaced by the new SMS, which was developed on the basis of the PSIGasport product.

Schedule management

The flexibility available to transport customers through the independent nomination of entry and exit points places numerous demands on the net-

The new SMS IT system now makes dispatching work considerably easier. In the event of a bottleneck, capacity instruments such as quantity relocations, flow commitments and interruptions are proposed by the SMS for a specific use or can be used proactively by the operator. Before the first use, a corresponding data set had to be set up in the SMS. The improvement provided by the new system was already evident at this stage. The master data (topology, partners, capacities) was transferred to the upstream IT systems via the standard interfaces.

The capacity instruments were quickly added by the project team, and the high level of standardization meant the market communication via Edig@s did not have to be dealt with explicitly. The project team merely had to enter a few details such as shipper codes or balancing group numbers. Time series data, such as the current planned values or agreed relocation quantities, was additionally recorded in the SMS during a monitoring period of several months, meaning that there was no need for costly data migration from the old systems.

Special calculations eliminated

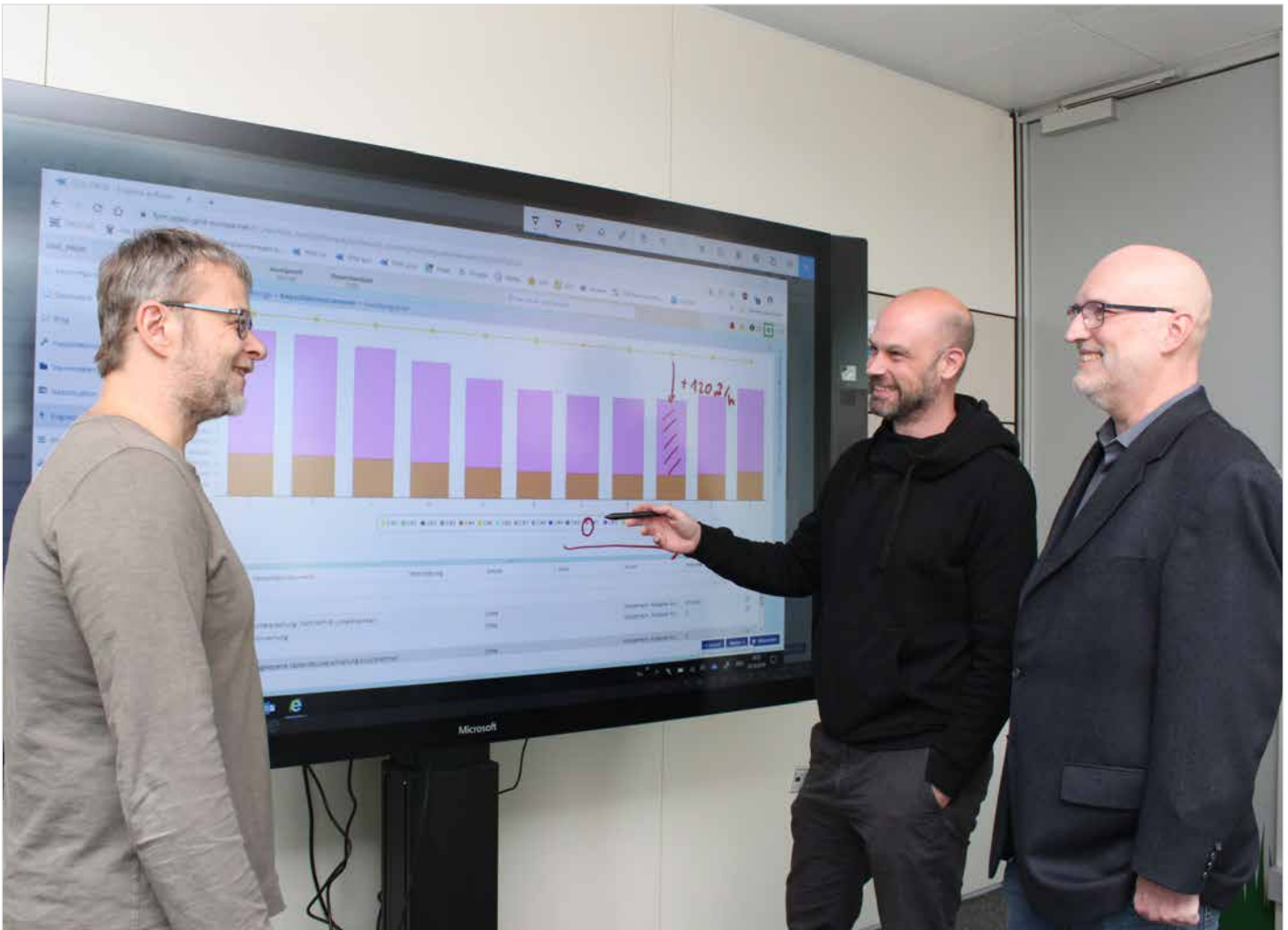
A further advantage of the high level of standardization is that there is no need for individual calculation rules for special calculations. The only exception is the calculation of control setpoints for the SCADA system based on the PSIcontrol network control system. Reasons for this include new requirements in the context of virtual interconnection points (VIP),

Project objectives

- Standardizing processes
- Automation where reasonably possible
- Achieving the requisite flexibility for users
- Reducing procedural and technical complexity
- Robust, fault-free operation around the clock
- Reducing operating costs
- Service performance

As part of a preliminary project, the processes were therefore incorporated, standardized and streamlined. An implementation project for a nomination management system (NMS) and

work controller. To meet customer demands, quantity flows in the gas transport network must be regularly assessed and readjusted as part of the schedule management process.



Discussing a recommendation for action from the schedule management system.

since it has not yet been possible to establish a uniform procedure on the market. More complex calculations, e.g. for ordering fuel gas (internal consumption of the compressors), were implemented as a stand-alone module in the SMS.

Monitoring of processes

In addition to active network control, the monitoring of the network status is a key focus in dispatching. The SMS system notifies the dispatcher of any abnormal conditions in the areas of gas communication, interfaces or processes. Using context-sensitive navigation, the user is provided with further information to assess the situation. In addition

to the system notifications, various dashboards and monitors with a modern design are used.

Modern IT architecture

New applications have the attraction of allowing modern IT architectures to be used. Using containerization to make rapid deployments by means of Docker facilitates IT operations, for example. The same Docker container is tested by the manufacturer and the customer, and is then used in the production system, thereby precluding additional sources of error.

The higher-level reporting from the data warehouse benefits from a new, modern data filling process. The data is filled from the SMS via data stream-

ing using Apache Kafka to a Hadoop module as intermediate storage. 🌀

Open Grid Europe is one of the leading transmission system operators in Europe with a supply network of around 12 000 kilometers. Its 1450 employees nationwide work to ensure safe, customer-oriented gas transportation. OGE shapes the energy supply industry—today and as part of the energy mix of the future.

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What's new: Hydrogen and energy efficiency support CO₂ reduction

Into the Future with Hydrogen

Efforts to achieve CO₂ reduction targets as well as price increases announced for electricity are causing energy suppliers to switch their focus for planning and optimization to energy efficiency and CO₂ limits.

The PSI Gas & Oil Division helps gas network operators to receive more and more hydrogen through existing pipeline infrastructure, to convert entire natural gas pipelines to hydrogen pipelines, to implement sector coupling with electricity and heat networks, to enable the CO₂ footprint to be measured and forecast for any gas supply and to further improve the energy efficiency of gas transport.

Leakage monitoring for hydrogen pipelines

As early as 1997, the first leakage monitoring system for the Böhlen-Schkopau hydrogen transport pipeline was put into operation with PSI software. In addition to the technical requirements for the connection of hydrogen pipelines, different regulatory frameworks had to be taken into account during operation. The use of specialized software products for pipelines and the PSI experts' knowledge of mandatory safety requirements

HYPOS

HYPOS stands for Hydrogen Power Storage & Solutions East Germany and is one of the ten innovation projects of the "Twenty20—Partnership for Innovation" initiative led by the Federal Ministry of Education and Research. The aim of the project comprises the manufacture, storage, distribution and widespread use of green hydrogen in the chemical, refining, mobility and energy supply industries.

allow customers to work with hydrogen in accordance with regulations and to obtain the operating license for product pipelines. To achieve this, PSI draws on its long-term, successful cooperation with the relevant experts and monitoring authorities and—as part of the HYPOS initiative—supports efforts to make hydrogen pipelines suitable for industrial and economical use.

Operational and setpoint optimization for hydrogen pipelines

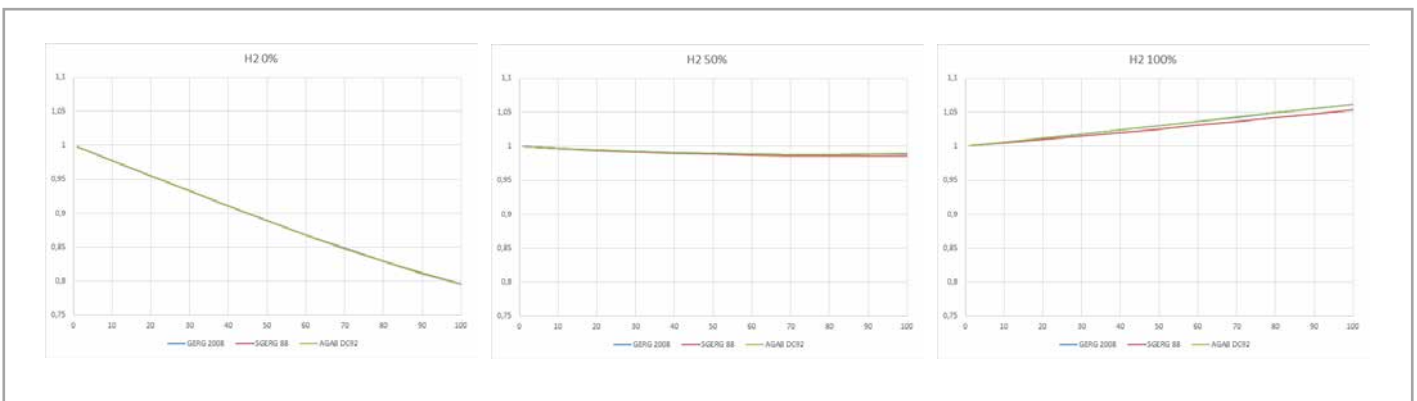
As the hydrogen content increases, the gas in the network behaves more and more like an ideal gas. This behavior is depicted clearly by the equations of state used in the PSI software.

CO₂ footprint for gas supplies

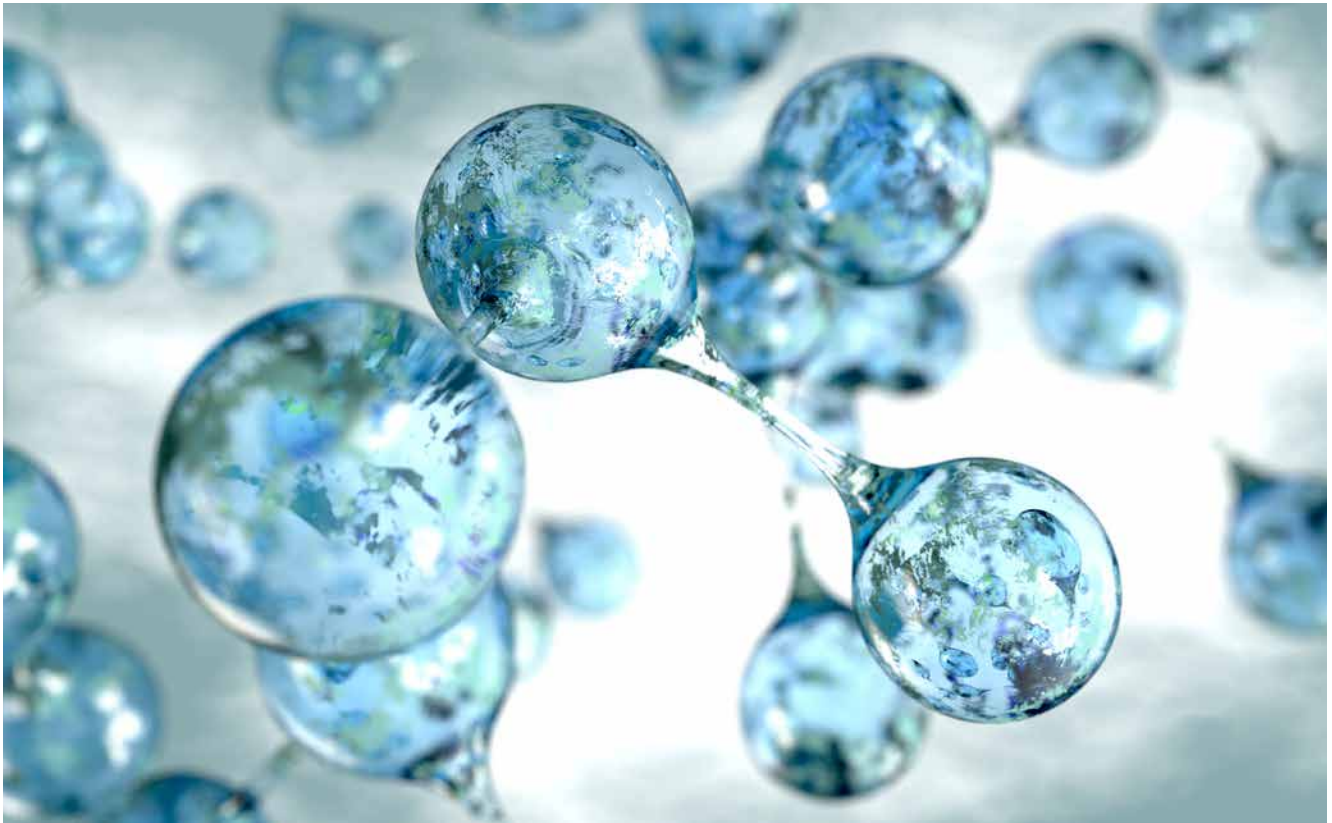
The CO₂ footprint for each gas supply can be calculated precisely. To do this, the CO₂ content for each gas component fed in (gas rails) is determined, tracked during transport and determined at exit stations for the past, present and near future. The gas composition can be determined during current operation at all exit stations and even at any point in the network by using the gas composition tracking system available in the online simulation. The predictive simulation can also be used to give a forward projection on the network for the near future.

Energy optimization for compressors

Compressors are by far the largest energy consumers in gas transport. Significant improvements can be made



Graph showing the curve for the compressibility factor when hydrogen is fed into a typical natural gas.



Energy source for the future: hydrogen.

to energy efficiency in gas transport if the correct operating point for each compressor is known at all times and can be used for operational and set-point optimization.

PSI has improved the accuracy of characteristic diagrams and has additionally developed a method for correcting the increasing inaccuracy of the characteristic diagram on account of plant aging. For characteristic diagram correction, the network operator has to provide highly accurate measured values, especially for the operating flow rate. Operating points must be approached throughout the permissible characteristic diagram range, i.e. even those outside the optimum operating point.

The cost of recording accurate compressor measurement values and of approaching operating points throughout the permissible characteristic diagram range is quite high for the

network operator, but it will become increasingly worthwhile as energy and CO₂ emission costs rise. The basis for improving characteristic diagrams by means of mathematical mapping

MathEnergy R&D project

In the MathEnergy research and development project, PSI is part of a consortium of universities and industrial partners jointly researching key mathematical techniques for energy grids. The consortium is formulating mathematical models for analysis and simulation of cross-grid scenarios for the energy supply system. The objective is to provide faster, more accurate results for the simulation and optimization of multimodal energy grids. The research project is funded by the German Federal Ministry for Economic Affairs and Energy (BMWi).

functions was researched as part of the MathEnergy project and tested on multiple characteristic diagrams. Characteristic diagrams are used in the PSIGanesi planning system and thus provide higher accuracy in forecast calculations for compressor use. The improvement is also the basis for steady-state operational and setpoint optimization with the new product PSIGanopt.

This project is used to determine optimal modes of operation and ideal setpoints for compressors and controllers in gas networks in steady-state operation, taking into account limitations such as characteristic diagram restrictions as well as maximum and minimum flows and pressures of compressors and controllers. ☉

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News: Successful operation start of the gas management system PSIcontrol

Software Upgrade for Gasunie Deutschland

As part of the order placed with PSI Software AG for the supply of a software upgrade for the existing gas management system to Gasunie Deutschland, the three site systems went into operation as planned after the successful commissioning of the test system phase and parallel operation.

The extensive upgrade contains updates of the existing PSI standard applications and functional project-specific extensions. Based on the gas management suite, a powerful system is in place. This includes the core modules PSIcontrol/Gas, PSItransport for scheduling and PSIGanesi/Online Simulation for monitoring, controlling and balancing the gas network as well as PSIREKO

for gas composition tracking for billing purposes and PSIreporting for powerful reporting. In addition to general product maintenance, the upgrade includes especially continuous further development in the area of IT security.

As part of the PSI upgrade service, the upgrade capability of the software system ensures a technical basis for cyclic expansion of the PSI software components used. 

Gasunie Deutschland is responsible for the management, operation and expansion of an approximately 3800-kilometre long pipeline network in northern Germany. Due to its geographical location, this pipeline network functions as a gas hub for north-western Europe and thus makes a significant contribution to the security of gas supply.

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Event: A look back on the 2019 Asset Service Days

Maintenance and Fault Clearance with PSIcommand

On October 23 and 24, 2019, PSI hosted the Asset Service Days in Aschaffenburg for the second time. Over the course of numerous presentations and exciting panel discussions, the 60 representatives from energy supply companies exchanged ideas and shared information on the themes of servicing and maintenance of distributed assets, troubleshooting processes, decentralized network automation and efficient low-voltage grid management. The new major release of the “PSIcommand 4.0” field force management (FFM) system and the new release of the “PSIcontrol 4.7” control system were presented in live demonstrations.

The event looked at the factors driving the industry by dividing the topic into three areas: “advantages of digitalization,” “advantages of automation” and “low-voltage grid management.” This includes securing process knowledge, increasing efficiency and exploiting potential through process networking.

Advantages of digitalization

By digitally mapping sequences and process decisions, companies are able to secure their employees’ process knowledge sustainably and across generations, which has become a pertinent issue as a result of the population pyramid. The presentation on “operational order de-

sign as a basis for efficient maintenance” discussed the integration of FFM in the system landscape, operational order bundling and order content design. Building on this, the following presentations showed the development of generated orders. The system uses parameterizable dynamic checklists to support all work preparation processes as well as external company and material organization.

The presentation also demonstrated the networking of operational and maintenance-related tasks in the course of integrated switching application management, together with step list creation and technical inspection in the control system.

Mobile information for engineers

Following the presentation on “work preparation in field force management,” a presentation was given on the engineer’s perspective. The PSIgridmobile tool provides engineers with all information in an identical mobile form, whether they are performing maintenance or investigating faults. A highlight of the presentation was the autonomous execution of the step list in the switch team under protection from the control system.

The “Field force management excels with troubleshooting” presentation showed the diverse benefits of an interdisciplinary integrated FFM for the interconnected processes of troubleshooting and maintenance. PSIcommand uses the fault management module to support the recording and management of faults, from minor incidents to emergency situations.

Advantages of automation

Operational organization requires a considerable amount of decision making. Numerous issues need to be resolved every day—not only short-term ones, but also long-term questions such as make-or-buy decisions and the feasibility of projects or of additional services. In the “Field Force Management 4.0” presentation, the focus was on the application areas for the automation of decision-making processes in field force management. This includes the processes that are available as standard, such as “automated scheduling,” “capacity planning” and “strategic order bundling.”



Exciting presentations also offered insights into customer solutions.

Ideas for ad hoc rescheduling in the event of a fault were also discussed. In order to illustrate the long-term gains and potential of automation, the second day featured a live insight into automated decision-making processes and their results. This was followed by two customer talks about the introduction of automated decision-making processes using PSIcommand.

Deep Qualicision was presented as an expansion module to the PSI optimization software. This module enables the decisions from the decision-making processes presented in the “FFM 4.0” lecture to be aligned with management guidelines.

Process changes require continuous organizational coordination. In “Model-based consulting for the realignment of network operation,” a presentation was given on the consulting services offered for identifying and realizing potential for efficiency improvement, e.g. through the reorganization of on-call services or

optimization of the in-house service portfolio.

Decentralized management of low-voltage networks

The final two presentations focused on low voltage. “Smart grid—hybrid grid management for distribution networks” examined the possibilities of decentralized network automation with load management, plus the commissioning of decentralized network automation and the options for control and regulation. In contrast, the presentation on “decentralized management of low-voltage networks” showed PSI’s concept for integrating low-voltage network management into field force management, in which engineers manage the states from a decentralized location and the control system is available to them as a service. ☉

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R&D: Unique integrated software solution for electricity and energy systems

EnergyShield Boosts Cybersecurity

The R&D project EnergyShield (EU-H2020), funded by the European Union, and started in July in Bucharest, Romania. Eighteen partner companies from ten different European countries presented their work packages and plans for the next three years. EnergyShield addresses the needs of electrical power and energy system operators (EPES) in the field of cyber security. It combines the latest technologies for vulnerability assessment, monitoring and protection to develop a unique integrated defensive software toolkit.



a major focus on market impact and is fully integrated with the compulsory periodic reviews, milestones and deliverables defined in the project. ☉

EnergyShield will combine five cyber security tools into three modules: Assessment (vulnerability assessment and security behavior analysis), Monitoring and Protection (anomaly detection and DDoS mitigation) and finally Learning and Sharing (security information and event management system). The toolkit will be implemented in field tests and is verified along the complete EPES value chain.

The consortium is led by the two large industrial partners SIVECO Romania SA (coordinator) and PSI Software AG from Germany supported by seven innovative SMEs, three academic research organizations and seven end-users representing various parts of the EPES value chain. The project received a funding of around



At European Utility Week 2019 in Paris, the EnergyShield project was introduced at the PSI stand.

7,5 million Euros from the European Commission and is scheduled for three years.

PSI will use a specific exploitation methodology for EU-funded collaborative projects which is particularly well suited for Horizon 2020, as it has



EU-funding 832907 in H2020 innovation program.

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PSI 

Industrial Intelligence

At the Hannover Messe trade fair from April 20–24, 2020, PSI will present a wide range of software solutions for production, logistics, service and maintenance with a focus on AI applications.

We look forward to welcoming you in hall 17, stand C26.



News: Allgäuer Überlandwerk and AllgäuNetz again rely on PSIcontrol system

Upgrade with important functions

The Allgäuer Überlandwerk GmbH and the AllgäuNetz GmbH & Co. KG commissioned PSI Software AG to upgrade the existing network control system implemented in 2017 to PSIcontrol 4.5. In October 2019, after more than two years of joint project work, the new AllgäuNetz control center went into operation.

With the upgrade of the control system, important new functions were integrated. Up-to-date geo data, lightning detection, a renewed fault analysis, low-voltage integration, post-mortem analysis, SCADA programming

PSIcontrol fulfills important IT security requirements

The customer's important requirements for IT security are fulfilled with the IT security technology implemented in PSIcontrol on the basis of the BDEW/ÖE rules.

Allgäuer Überlandwerk GmbH has been reliably supplying 144 000 customers in the Allgäu region with electricity for over 90 years. The AllgäuNetz GmbH & Co. KG is responsible for the operation, maintenance and expansion of the local and regional distribution network facilities for grid-bound energy.



The new control room at AllgäuNetz.

interface and switching application management increasingly support network management. A maintenance contract with update and upgrade guarantees the regular updating of the system.

PSI was already commissioned by the Allgäuer Überlandwerk in 1994 with the first delivery and implementation of the PSIcontrol control system. With the upgrade order customer is relying on a PSI

system already in its third generation. 🔄

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News: DB Energie relies on PSI radio routers nationwide

Intelligent network connection

In the framework of a comprehensive migration concept of its integrated control system with nine sites, DB Energie GmbH has awarded PSI Software AG with the delivery and implementation of radio routers for the intelligent network connection (INA boxes) and redundant IP-based communication to the more than 400 larger sites.

DB Energie is implementing a new large network control system for the network management tasks of all central switching stations and S-Bahn network control stations and is also building three new central server sites. As part of the migration sub-project for all sites, all larger sites

will comply with cyber security requirements.

Network-based and flexible control of the entire traction power supply

The control concept provides for three fully redundant central server sites and a common database manag-

ementation, system maintenance costs will be significantly reduced and the integration of third-party systems simplified.

Network control system for all central switching stations and network control stations based on PSIcontrol

In 2018, PSI was already commissioned by DB Energie GmbH to supply a network control system for the renewal of all central switching stations and network control stations on the basis of the PSIcontrol network control system. The PSI system has been used successfully at



Skyline Frankfurt/Main with DB Tower.

will initially be equipped with an IP-based radio router from PSI (INA boxes). The necessary connections to the old and new control system will be subsequently established. Parallel operation will be carried out with complete redundancy and in com-

ing the entire data model for all the networks. All substations will route their data to the central server sites. In the future, DB's entire traction power supply is to be managed more flexibly from nine control stations with a network-based control system. In addi-

tion, DB Energie since the beginning of 2000 and has been continuously adapted to the operational requirements. ☺

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News: PSI presented new network control solutions at the CONSULECTRA 2019

New Functions for Network Control

PSI Software AG presented new software solutions and functions for network control technology, mobile network control, field force management, network utilization and intelligent load management at the CONSULECTRA Symposium Netzleittechnik 2019 from 12 to 13 November 2019 in Hamburg.

As a highlight, the new version 4.7 of the PSIcontrol network control system shows the current functions for efficient network operation for all network levels. The system solution PSIaso/TSO, with the integrated dynamic security assessment functionality for the analysis of the transient stability of energy grids, is derived from this.

Mobile information for installer

For mobile network management, the PSIgridmobile solution, which offers the engineer more detailed information about the network than was previously available, was presented. In the network image, work safety devices can be set and circuits can be tracked.

These are transmitted directly to the control system and managed transparently for everyone. For every switching action, the control system provides services such as interlocks, network calculations and comments.

Intelligent control of loading processes

The PSIsmartcharging loading management system, which offers a future-proof platform for the intelligent control and optimization of loading processes, was also presented. In addition to network stabilizing aspects, the system also takes into account operational requirements and economic factors in bus depots, for fleet operators, multi-storey car parks, public loading parks and the regulation of

the private infrastructure from the network operator's point of view.

More security for electrical and pipe networks

With the PSIprins network control system, the new version in release 8 focuses on increasing the efficiency of the data model input, opening up the system through additional import and export options and further developing the HEO functions for electricity and pipe networks.

With PSIprins 8, in particular the information functions for the PSIprins/Web and PSIprins/Protex office world have been renewed under the aspect of current security and customer requirements. In addition, existing PSI modules such as the Xchange data exchange tool are connected to PSIprins. 🌀

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Save the date!
PSI EE Info Days 2020
11 - 12, November 2020 | Stadthalle Aschaffenburg

The graphic features a background of wind turbines and a large gear-like pattern. On the right side, there is a cluster of green hexagonal icons representing various energy and infrastructure concepts: a wind turbine, a power line tower, a factory, a train, a key, a laptop, a wrench and screwdriver, a bus, a house with solar panels, a car, and a server rack. A small box at the bottom right of the icon cluster says "3rd-Party Software".

News: Stadtwerke Duisburg Energiehandel GmbH successfully commences operations with PSImarket

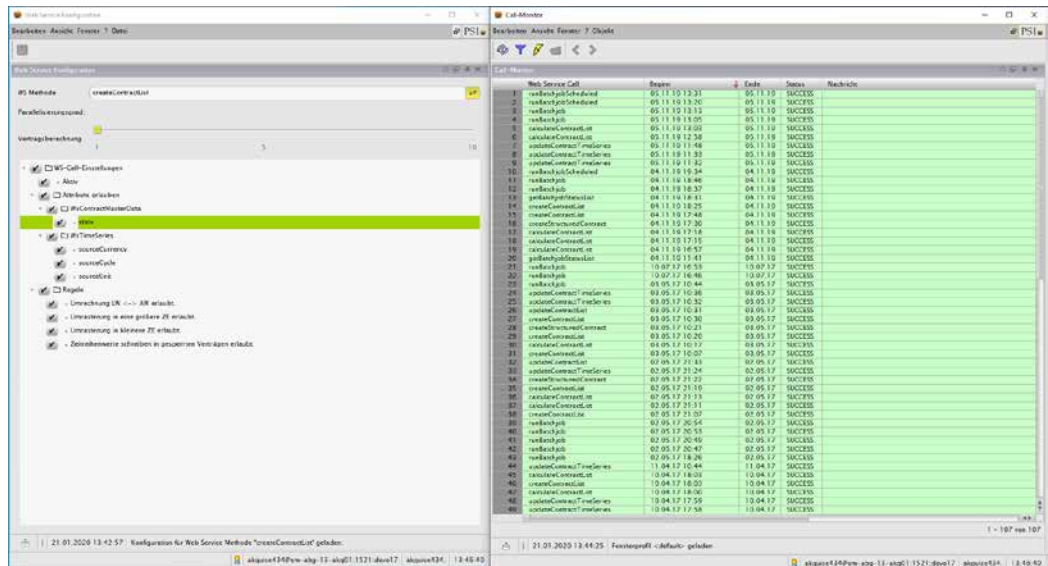
Energy Trading System as Core System

PSI Energy Markets GmbH has completed the implementation of an energy trading system based on PSImarket for the Stadtwerke Duisburg Energiehandel GmbH (SWDU EH). The system has been successfully implemented and replaces the previous solution.

Strategic importance

The energy trading system is the core of the existing system and process landscape for the energy trading sub-

Based on the PSImarket standard modules, contract and portfolio management, schedule registration and nomination, connection to the Trayport trading platform, import of all standard market price quotations and billing were applied, as well as electronic confirmation matching (eCM) and the submission of regulatory reports (REMIT).



PSImarket Webservice Configuration.


Integration via Web service interface

The migration of master data from the legacy system was ensured in a

dition to the already completed contract data migration, SWDU EH also relies on the web service interface in PSImarket for the further integration of the trading system.

After the speedy implementation of

subsidiary and is therefore of outstanding strategic importance.

As a flexible and innovative energy trading and service company, Stadtwerke Duisburg Energiehandel is a service partner for municipal utilities and redistributors in Germany. The wholly-owned subsidiary of Stadtwerke Duisburg AG optimizes and markets the shareholder's CHP power plant portfolio and EEG plants. In addition, it acts for the group as a central market access point for electricity, gas and CO₂ and provides balancing group management services and portfolio management for other customers. 

“PSImarket is ideally suited to map further processes close to the core processes in the future. By integrating the web service interface into our existing process chains, we have already been able to significantly increase the degree of automation and will also be able to establish highly scalable process structures in the future.”

Lars Sünderkamp
Project manager
Stadtwerke Duisburg Energiehandel GmbH

user-friendly and efficient way by the standard tools for data import and export available in PSImarket. In ad-

dition to the already completed contract data migration, SWDU EH also relies on the web service interface in PSImarket for the further integration of the trading system. After the speedy implementation of

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News: Successful Commissioning of the energy trading system PSImarket at the EHA

Portfolio Management for Electricity and Gas Market

EHA Energie-Handels-Gesellschaft mbH & Co. KG has successfully put the portfolio management system PSImarket from the PSI Energy Markets GmbH into operation. With the scheduled completion of the implementation, the previous system was also replaced.

services "from a single source". This includes the procurement and supply of green electricity and gas, energy controlling and energy consulting.

Based on the standard modules, the new solution focuses on trading functions and portfolio management for the electricity and gas markets as well as on schedule registration and nomination. The project also included the joint conception and development of functions for the management of individual procurement strategies.

Convincing high flexibility and configurability

"The procurement strategy module was implemented, introduced and in-

“

Following an intensive concept phase, the EHA-specific extensions were implemented and the system went live. The quality of the software developed and the good cooperation with PSI Energy Markets was very convincing.

Dr. Tina Loll

Project manager

EHA Energie-Handels-Gesellschaft mbH & Co. KG

”

in the long term and implement our individual strategies very precisely," emphasizes Eckart Boege, the person responsible for energy trading at EHA.

The results are sustainable reductions in consumption as well as costs and practical climate protection. ☉



Headquarters Energie-Handels-Gesellschaft in Hamburg.

tegrated into the existing solution by PSI for EHA. The high flexibility and configurability of PSImarket ensures that we can also cover the very dynamic requirements of energy trading

The EHA Energie-Handels-Gesellschaft mbH & Co. KG is the specialist for chain stores in Germany and Austria. Customers receive a comprehensive package of energy ser-

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Event: PSI demonstrates integrated software solutions at the E-world 2020

Added Value for the Energy Markets

PSI is presenting its latest integrated software solutions for the energy industry at the E-world energy & water in Essen from 11 to 13 February 2020 (Hall 3, Stand 314). Based on the PSI technology platform, new and expanded functions for optimized gas transport and storage, intelligent network control, load and charge management, field force management, energy trading and sales, optimization and cloud-based applications will be presented.

PSI is presenting the current version of the PSIGassuite with new and expanded functions for transport dispatching, regional distributors and storage operators. The master data management with functions such as branching, merging and staging will be presented as a new module.

Software optimized gas transport and storage

The new PSIGasguide supports dispatching in the determination and optimization of current and future network operations. PSIGasguide uses Qualicision, a PSI solution for multi-criteria optimization and decision support based on AI procedures and can be integrated or used as a stand-alone. New complex functions and enhancements for online simulation, gas composition reconstruction, compressor optimization and timetable management will be presented. Services such as the application software upgrade service and the hosting of PSIGassuite in the cloud round out the offer.

Mapping of long-term Power Purchase Agreements (PPAs)

The energy trading system PSImarket supports the integration of renewa-



PSI booth at the E-world 2019.

ble energies and the associated volatile fluctuations. This is done, for example, by mapping complex long-term electricity supply contracts Power Purchase Agreements (PPAs) and integrating functions for automation and short-term trading.

WORA principle and PSI Click Design


In addition, extensive functional enhancements will be presented, including new interfaces to trading platforms, a new module for defining procurement strategies and improve-

ments in operation and performance. The system can be operated entirely in the cloud. The user interface will be provided via a web GUI or a rich client. Here, PSI will show current developments in click design technology and the WORA principle (Write Once Run Anywhere).

Also the preconfigured PSImarket system for small and medium-sized municipal utilities, which is specifically tailored to the needs of municipal utilities will be displayed. The PSIrwin revision and calibration system will be presented with newly available measured value import and functionalities for scheduling and document storage.

Web-based integration of electro mobility

Other key exhibits include new software solutions for intelligent network management and the first cloud-based applications for integrating electro mobility via smart grid apps and load management for the charging infrastructure.

In addition, applications for network monitoring with IoT data-stream methods as well as network operation management, area network automation and operation optimization through decentralized network controllers with field force management will be demonstrated. Grid security will demonstrate the secure connection and reliable protection of tele-control lines in companies. 

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News: Depot and charging management for the operation of e-buses in Vélizy near Paris


Keolis Chooses PSI Software for E-Mobility

As part of a Europe-wide tender for the gradual introduction of zero-emission buses, the French transportation company, Keolis S.A., decided in favour of the PSI Transcom GmbH to supply a depot and charging management system for around fifty electric buses at the Vélizy depot near Paris.

The charging and load management system with integrated dispatching module for e-buses ensures safe and efficient dispatching of electric buses by means of numerous interfaces, taking into account various conditions, such as the block-dependent ranges of the vehicles and the current outside temperature.

The system continuously checks which vehicles at the depot fit which blocks after which loading time. The necessary preconditioning, such as the automatic start of preheating or precooling, is initiated automatically by the system before the start of the block. The integrated load management controls the current energy demand and ensures that the specified

loading capacity at the depot is not exceeded.

As partner companies, IES Synergy as a manufacturer of chargers and Spiebatignolles are involved in the implementation. 

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EVENTS

www.psi.de/en/events



11.–13.02.2020	E-world energy & water 2020	Essen, Germany
30.03.–02.04.2020	15. Pipeline Technology Conference 2020	Berlin, Germany
20.–24.04.2020	Hannover Messe 2020	Hanover, Germany
06.–07.05.2020	Mainzer Netztagung	Mainz, Germany
03.–04.06.2020	PSIcontrol-Anwendergruppe (PAG)	Leipzig, Germany
16.–18.06.2020	Powertage-Fachforum	Zurich, Switzerland
24.–29.08.2020	cigré	Paris, France
22.–25.09.2020	InnoTrans	Berlin, Germany
23.09.2020	Symposium MathEnergy	Berlin, Germany
06.–09.10.2020	10. St. Petersburg International Gas Forum 2020	St. Petersburg, Russia
27.–29.10.2020	Enlit 2020	Milan, Italy
10.–11.11.2020	PSI EE Info Days 2020	Aschaffenburg, Germany

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