

# Direct Energy Marketing – The new generation energy dispatch evolution

A future-proof system for data transfer, dispatch  
and monitoring



# A new system for balancing supply and demand

## Who is Direct Energy Marketing designed for?

Direct Energy Marketing is suited to many types of generator. It can be used by those who have a distributed generators portfolio made up of small sites, or who manage a large windpark, or who run an independent power plant, or by organizations responsible for large generation assets spanning different energy sources. The solution is equally applicable to gas, coal, nuclear, wind, biomass, solar or hydro generators. It is often used for large generation sites which provide balancing services to the local System Operator (SO), but is also suited to manage small generating sites which may be controlled centrally or directly by the SO. With the introduction of new international balancing markets such as TERRE, Direct Energy Marketing is an invaluable tool for communicating and delivering TERRE commitments.

## What does Direct Energy Marketing do?

Direct Energy Marketing offers many valuable features but its core function is managing reserve market data flows between generators and the Transmission System Operator (TSO), including TERRE. It also provides fleet wide generation performance monitoring and dispatch.

Tasks done by Direct Energy Marketing include:

- Send planned availability and generation schedules to the SO
- Send priced bids and offers to the SO
- Receive and process instructions from the SO to provide balancing services such as reserve power, TERRE, load response, frequency response and reactive power
- Automatically transfer dispatch plans to all power plants, allowing operators to review each change to dispatch plans before accepting
- Provide set points to plant SCADA and DCS, providing direct plant control
- Provide a live view of generation against targets for individual power plants and entire fleets
- Calculate generation performance metrics and alerts using built-in calculation engine
- Provide the above services for multiple TSOs and energy markets simultaneously

# Why choose Direct Energy Marketing?

Direct Energy Marketing is a highly flexible solution that can readily accommodate individual customer requirements. It's browser-based, which makes it simple to install, modify and maintain and means a low total cost of ownership. Most importantly, it's been designed with the user in mind: Siemens Energy applied its years of knowledge and experience in the field to develop a product that's easy to use, simplifies processes and saves valuable time.

# Simplicity



## Increased efficiency

Our focus on the user experience means that it's quick and easy for operators to enter data and process requests. For example, we at Siemens Energy have made it as easy as possible for plant operators to enter and modify their availability profile, and users can also 'drag and drop' predefined plant data configurations, representing different operating modes, from a data library. Speed of response can be greatly improved. Direct Energy Marketing eliminates email, files, spreadsheets and phone calls from the dispatch process, saving valuable minutes and reducing many manual steps. Direct Energy Marketing can also eliminate human error entirely from the dispatch process, with data validation, enterprise-wide data transfer and set point processing all handled with minimal human intervention.



## Reduced complexity

Often the dispatch process involves multiple systems and individuals, each requiring a variety of data sources to make decisions. Direct Energy Marketing automatically marshals all the required data sources, ensuring that data is provided in the right place at the right time. For example, a power plant operator may have to manage plant availability, SO instructions and set point updates at the same time. Direct Energy Marketing prioritizes and streamlines these activities.



## Simplified management

All settings in the system can be accessed within the application itself, subject to the correct user rights being granted. This means that all configuration tasks, including adding assets, changing screen layouts, detailed security settings and changing connections to third party systems can be carried out by the user. You can also export, import and duplicate settings, allowing you to quickly create new users or assets based on an existing template. Although the software can be installed at multiple locations within an organization, configuration can be carried out centrally by a system administrator anywhere, rather than at each individual location. If, for example, a generating unit is added at one site, the changes are automatically propagated to the entire system.



## Ease of installation

The browser front-end means installation time is short – typically much less than half that of previous generation enterprise dispatch solutions. Direct Energy Marketing can also be configured offline, keeping any disruption to a minimum.



## Smooth transition

Because Direct Energy Marketing can be installed in parallel with your existing system, you can test its capabilities and performance before going live. The product is supplied with a full suite of simulators to help in this process.

# Flexibility



## Easily extendable

In addition to its core functionality, Direct Energy Marketing can easily be extended with plug-ins to add new features. This allows manual tasks to be automated. For example, by using the OPC interface add-in and set point calculation add-in, Direct Energy Marketing can provide set points to drive your plant, combining System Operator instructions with local generation targets automatically. The Application Programming Interface also makes it easy for third party systems to provide and retrieve data when required.



## Data compatibility

Data from other systems and in any form – for example OSI PI, Meters, XML, Web Services or OPC – can be brought into our system. This allows the import and processing of weather data, market price data or fuel consumption. Data can also be exported from our system using these continuous and file-based formats, for archiving or processing by other systems.



## Personalized screen layouts

Users can configure their own screen layout – they decide which information they want to view, and the size and position of each element on screen. All the core functions of Direct Energy Marketing – submissions, instructions, alerting and monitoring – can be displayed simultaneously. This personalization can of course be controlled by administrators using application permissions.



## Customized calculations, alerts and validation rules

The calculation engine allows different time-series data sets to be combined using arithmetic and time based calculations. In combination with the alert engine, warnings can be issued when events are due to happen in the future, such as limits being exceeded, or plant start ups required. Efficiency calculations, deviations, imbalances and thresholds can all be added to the system at any time. Direct Energy Marketing can also be adapted to meet any regulatory changes that may be introduced in the future.



## Location flexibility

The application can be installed at either the generating site, a central site, or both, allowing additional flexibility when deciding on the system's physical architecture.

# Robustness



## Customizable security

Security becomes much easier to manage with Direct Energy Marketing. You have the flexibility to set very specific security levels, which means you can define authorization levels for every individual user and for each of your assets. For example, you can ensure that a unit operator can only view and alter data for those tasks essential to their job. User access is also audited to further enhance security.



## High resilience

In the event of a hardware or network communication failure, Direct Energy Marketing can automatically switch to a backup system. This resilience also means that if one location should go down, all other stations will continue to operate normally. When installed on multiple sites, each location can operate independently of the others in event of system or comms failures. All data is transferred between locations using secure, persisted messages, and is automatically synchronized after a connection failure.



## From conception to delivery

Every customer operates in a unique environment, with their own processes and ways of working. Whether we are delivering a full turnkey solution or providing a software application, as early as possible in the project life cycle Siemens Energy makes sure we fully understand the benefits you wish to get from the system and the way you like to work. Siemens Energy uses its well-established tools and processes to gather your system requirements and configuration data, and we ensure we conform to your project

management processes, IT security processes and build standards throughout. With many years of experience to draw upon, Siemens Energy quickly adapts to the needs of different environments. We perform comprehensive analysis, preparation and testing offsite and prior to installation. This means Siemens Energy can arrive on site with a pre-configured system. We take all the steps we can to ensure a smooth transition and minimal disruption to your operation.

## A trusted partner



Siemens Energy has been supplying energy dispatch solutions to large and small generators for over 20 years. Direct Energy Marketing and its immediate predecessors are currently installed at over 50 locations and processes data for over 200 generation sites. During that time, we have gained a very deep understanding of what customers are looking for and how we can make their lives easier. Our latest solution builds on that bank of knowledge and expertise. Siemens Energy believes its simplicity, flexibility and robustness make it ideally suited to your organization, and we would welcome the chance to discuss its benefits with you in more detail.

**Joe Milnes** is production support co-ordinator at South Humber Bank power station. He joined the station as a trading support engineer in 2002, when it was in the process of implementing Panacea, the predecessor to Direct Energy Marketing.



South Humber Bank power station

"The fact that some of the Siemens Energy team have been involved in the development, implementation and support of energy dispatch products since 2001 means they have a deep understanding of the technical requirements of interfaces with other parties, and of the business processes surrounding the electricity market's regulatory and trading environment. That's very valuable.

"I've worked closely with Siemens Energy during system rollouts and upgrades to ensure they happen in the least disruptive way, and I don't remember ever having a negative experience. One thing I like about the products is their usability: if you take a particular task, like SO submissions, everything you need for that task is there on one screen. That's far easier than having to use a number of different screens.

"Siemens Energy are very good at listening to customers and developing products to suit their needs. If we request an urgent change, then they're very responsive, and if it's not urgent then they'll consider incorporating it at the next major upgrade. We win, and they get a better product. It's a very collaborative way of working. If I want, for example, the Direct Energy Marketing client to monitor something new, then I'll discuss it with Siemens Energy and they'll come back with ideas and we'll work on it together. Bureaucracy doesn't get in the way."

**Kevin Kennedy** is the IT director for Energy Solutions and Energy Infrastructure at ENGIE in the UK.

"One attraction is the product's modular design which means it can scale with our organization: if we

add an asset, or need to remove one, we can do so very easily. That flexibility is very important to our business. The relationship with the Siemens Energy team has always been a very positive one. We've done a lot of system integration work together and it's gone extremely well.

"We can bounce ideas off them and have open two-way discussions. They appreciate our needs and have been very accommodating; it feels like a partnership. They understand the constraints and pressures we're under and help us to work through them. Companies are about individuals. The Siemens Energy team is a very stable one and the relationship goes back many years. We work together very well."

**Andy Scott** is the applications manager for ENGIE's Energy Infrastructure division in the UK, with responsibility for trading software and power station dispatch systems.



Dinorwig power station

"The Siemens Energy product we use is very robust and it has to be: we depend on it 24/7. The fact it's extremely reliable means we only need a small team supporting it. In the past five years we've had annual service meetings with Siemens Energy and very few queries between times. The performance has been rock solid.

"When we decided to standardize the systems we were using across our stations due to various acquisitions, Siemens Energy was able to provide us with on-the-spot solutions and expertise. Each station had its own distinct challenges but the Siemens Energy team had the knowledge to overcome them and ensure the implementation went well.

"The control room environment is quite a traditional one. You need a product that people are comfortable with, that's easy-to-use and resilient and Siemens Energy has provided a solution which meets the unique

constraints of that environment. As the product has developed over the years, they've kept the user community on board. We've always had a very positive relationship with the team. It's easy to contact them and we get an immediate response. I'll always seek them out if I've got an issue. They'll always have an answer."

**Yadu Saxena** is a software support engineer at Avanade, the business technology solutions and managed services provider used by Centrica for IT support for its energy trading platform. The platform is key to Centrica's growing midstream business.

"We have fortnightly calls with Siemens Energy to discuss any application issues that might have arisen over the last couple of weeks. Having a regular dialogue with the Siemens Energy support engineers is really valuable. They're extremely knowledgeable and so whatever issues we've seen they understand very well and will suggest how we can resolve them.

"If there's an occasion when we have an urgent issue that our own team can't fix, then we have the security of knowing the Siemens Energy 24/7 helpline provides constant support. Having that dedicated helpline works really well. The Siemens Energy engineers are very responsive and understand our business. That makes our lives easier."

**Kevin Armstrong** works for Natural Power, an independent renewable energy consultancy. As control center manager at its global HQ, he provides customers with bespoke control room services for over 2.7 GW of projects across the renewable sector.

"We've seen major growth in the last four years and the service Siemens Energy provides is absolutely fundamental to that. We couldn't expand in the way we have without it. One of the aspects that's most important to us is out of hours support, when any bugs or technical issues are sorted out if our own operators are struggling. The support from Siemens Energy is always superb. It's crucial they react the way they do, because responsiveness in this industry is vital. Other systems may have the same functionality but it's having the knowledge that whenever you really need help, you can get it, that matters most to us."

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