



Medium Voltage Systems

System Solution and Innovation

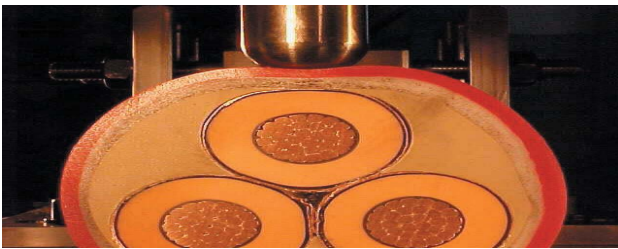
Prysmian is one of the worldwide leading players in the energy cable systems market, thanks to its innovative technological approach and to its capability in maintaining cost leadership, together with a strong commitment to Research and Development.

Extensive research has been conducted by Prysmian to provide solutions, which fully meet customers' requirements, with a strong focus on the development of competitive and reliable underground systems.

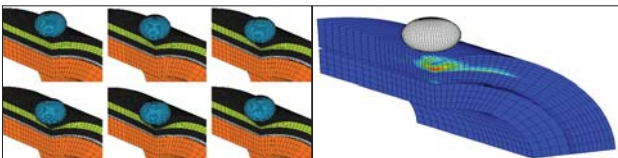
Prysmian dominates the technology scenario in all phases of power circuits development – engineering, design, production, installation and maintenance – with a turnkey approach, which covers the asset's entire lifetime and provides customers with the benefits of a lower total cost of ownership of the system.

Major Utilities are currently installing Pirelli power distribution solutions and exploiting their benefits.

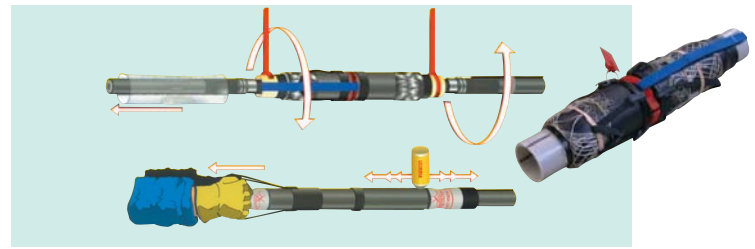
> AIR BAG™ Cable System



Prysmian has patented an innovative polymeric mechanical protection for cables, which, extended to accessories and installation aspects, has resulted into a new full system approach. This fully polymeric protection employed in the **Air Bag™** cables absorbs impacts and reduces the risk of permanent deformations and damage to the sensitive underlying cable layers. Generally, **Air Bag™** cable designs have reduced weights and dimensions, compared to traditional cables. This provides for significant economic advantages in terms of total system cost, allowing easier handling, longer delivery lengths and, therefore, a reduced need for joints. Another key advantage of the **Air Bag™** Cable System is related to installation: **Air Bag™** perfectly combines the new technologies applied to cables and accessories to exploit its innovative installation solutions at their best. **Air Bag™** Cable Systems can be installed in simplified compact trenches with no need for sand, backfill selection and/or special external protections like tiles and pipes, thanks to its superior mechanical properties. Also mechanised installation technologies benefit of the exceptional robustness of **Air Bag™**, which allows quicker and more efficient operations.



> Elasppeed™ V1.2



Following the success of the original **Elasppeed™** range, Prysmian has developed the second generation of these products, to further improve and speed up installation operations.

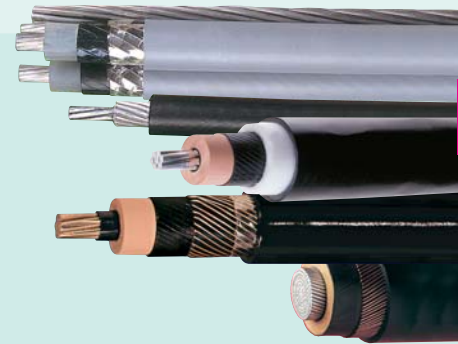
The new **Elasppeed™** 1.2 joints adopt the well proven cold-shrink technique, combined with the acknowledged leadership of Prysmian EPDM rubber technology, and enhanced with innovative features:

- The new self-ejecting tube reduces risks of errors during the installation.
- The standardised mastic pads ensure correct positioning and optimal water tightness.
- The inner part of the joint body is pre-greased with silicone lubricant and allows a cleaner installation and better electrical performances.
- The new textile straps allow easier handling.

Most importantly, **Elasppeed™** 1.2 joints allow checking and monitoring any single jointing operation, and ensure superior quality and reliability of the installation.

Elasppeed™ 1.2 joints are suitable for most applications and cable constructions, including transition jointing. They are available in **Air Bag™** configuration to ensure full system mechanical protection and compatibility. All joints are 100% factory tested and comply with the strictest national and international standards.

YOUR ENERGY... OUR SYSTEMS... ANYWHERE



> Microtunnelling



Environmental and social issues are nowadays putting strong pressure on the growing need for upgrading and renewing power distribution and transmission grids. In this scenario Prysmian dedicates its efforts to the development of new cable designs, which allow for optimised installation techniques. A typical example of this is **Air Bag™** Microtunnelling. The **Air Bag™** Microtunnelling technique consists of two phases. Horizontal drilling is carried out by means of a drilling head with a remote control sensor placed inside of it. Constant radar monitoring allows to precisely track even highly complex routes. The **Air Bag™** cable is laid with no additional protection pipes or ducts, which would instead be required by a standard cable, and installation time is reduced by up to 30 percent. This type of installation does not require to open trenches in the carriageway, thus minimising disruption inconveniences, and, thereby, cuts down all costs related to restoration of road surfaces and removal of excavation debris. Installation works are carried out with the same equipment commonly used for pipelines laying and require limited resources for handling. The **Air Bag™** Microtunnelling technology proves to be very fast, easy and effective. Thanks to its minimum environmental impact, the system proposed by Prysmian is the perfect solution for the installation of power distribution lines in densely populated urban areas or in protected rural environments, such as parks and reserves. For installation operations carried out with innovative techniques and systems, such as Microtunnelling, Prysmian may offer to its customers full turn-key project consulting and supervision.

> New Services

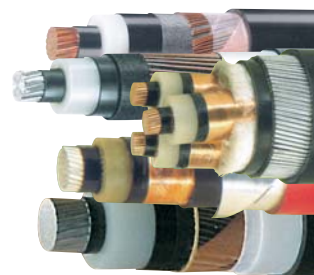


In addition to the innovative products resulted from our strong industrial background and technical expertise, we also offer to our customers fully integrated supply chain services.

The range includes:

- Cut-to-length
- Delivery to site
- Drum management
- Vendor Managed Inventory
- Order tracking
- E-business

All service packages are tailored to the real customer needs in order to optimise efficiencies and to continuously improve our relationship.



About us

Prysmian Cables & Systems is a world-class multinational company. Founded in 1872 as "Ditta Pirelli & C.", it has achieved a leading position for more than a century of operations in its two key international markets - "Energy Cables & Systems" and "Telecom Cables & Systems".

Prysmian Cables and Systems is one of the worldwide leading manufacturer of power and telecommunications cables, with 52 manufacturing facilities in 21 countries in five continents and a market share in excess of 10%.

Prysmian Energy Cables and Systems is a global solutions provider, offering a wide range of integrated solutions, such as cable systems, system design and engineering, project management, installation and post-sale services.

Prysmian Energy Cables and Systems concentrates on continuous product innovation and on achieving a competitive edge by focusing on research and development. This is done through Prysmian's own R&D centres and by co-operating with universities, scientific institutions and above all, our customers. Prysmian's world-wide organisation makes and delivers advanced technological solutions to customers anywhere in the world.

Global Solutions Provider

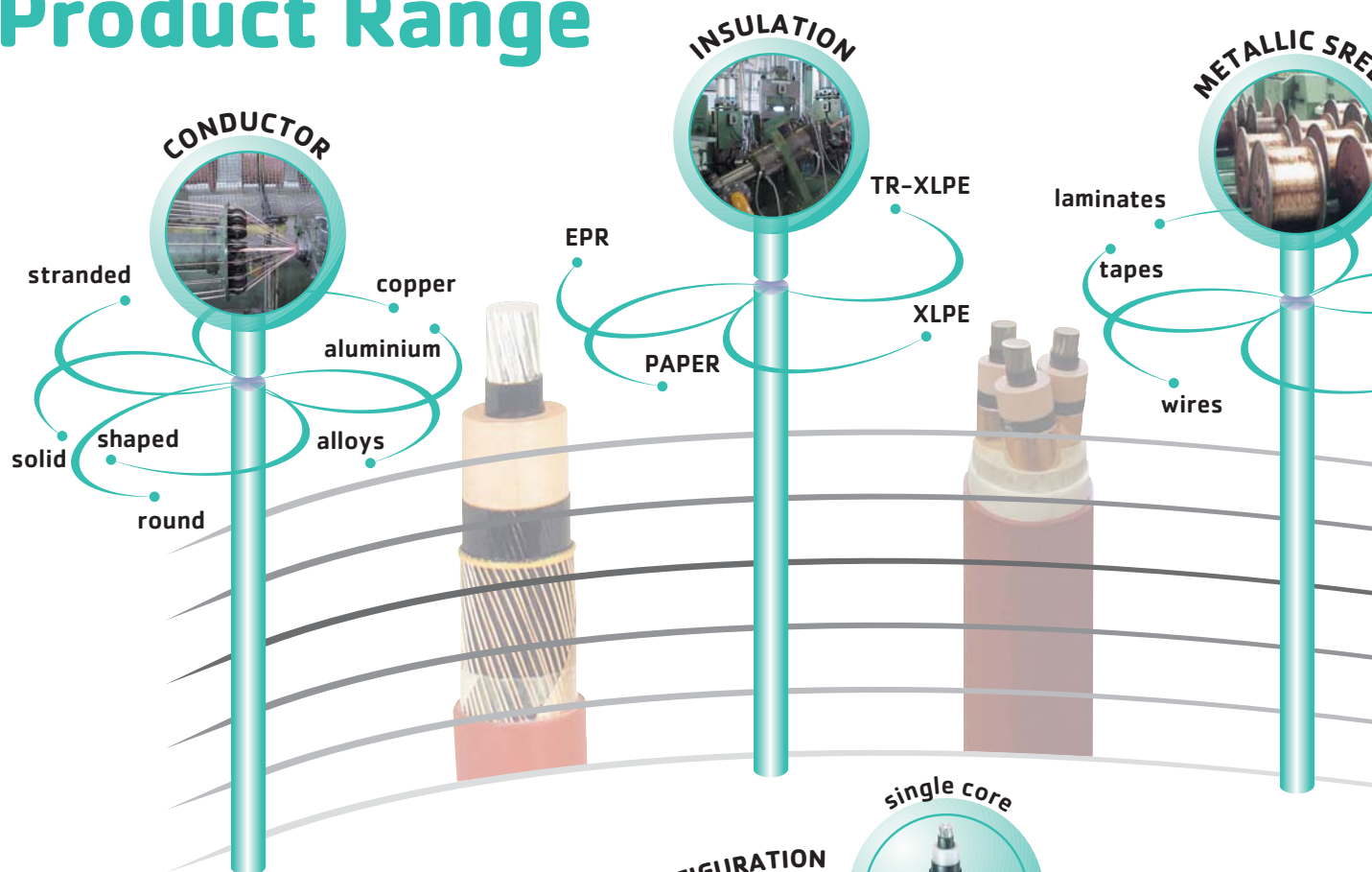
The energy market has been changing dramatically in recent years, as a result of deregulation and privatisation. To face the challenge of competition, energy transmission and distribution operators are driven towards an optimum use of their existing resources and new investments.

To support its customers, Prysmian has evolved over the years from the traditional role of cable manufacturer to that of a **Global Solution Provider**. Prysmian focuses on a total system approach, to give its customers the lowest cost of ownership of their new and installed cable networks.

This "Total System" approach is, at all voltages, the ultimate solution to provide power utilities with real advantages in terms of asset optimisation. Besides an increasing activity on product innovation to lower investment costs, Prysmian is developing additional pre and post sales services for its customers – e.g. network services, enhanced logistics, engineering studies – to optimise asset management and give the best possible exploitation of transmission and distribution networks.



Product Range

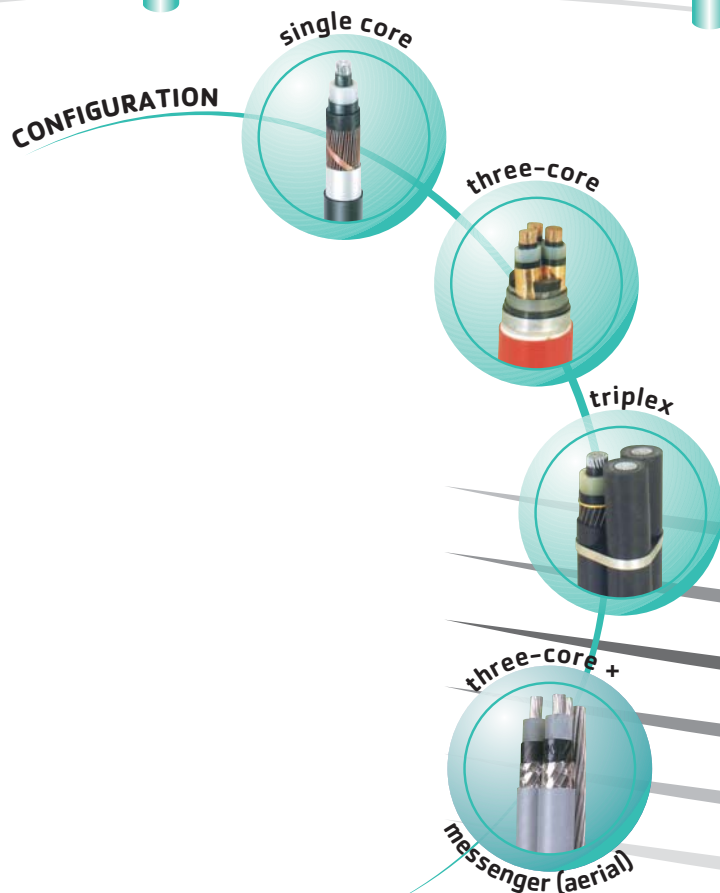


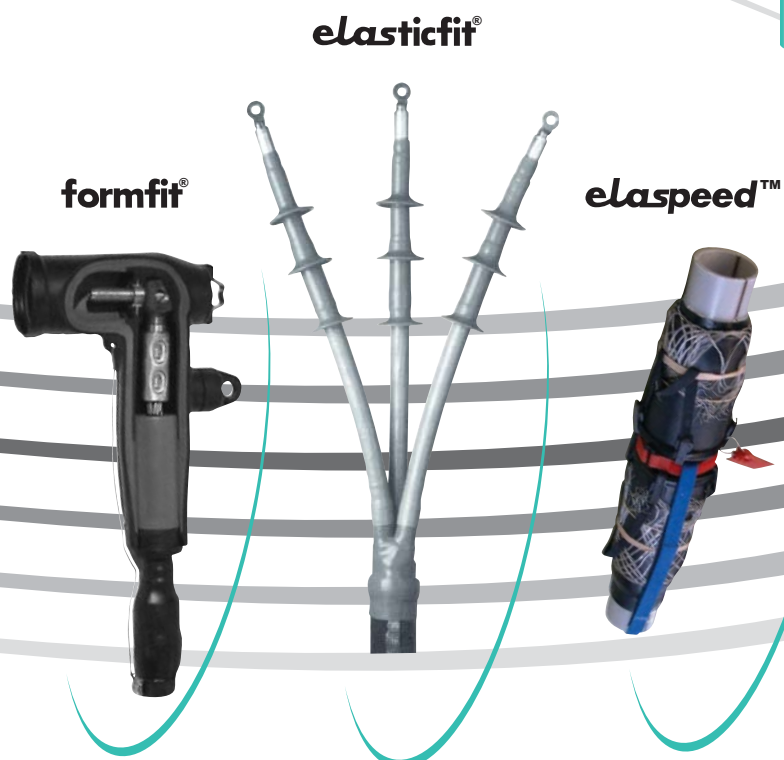
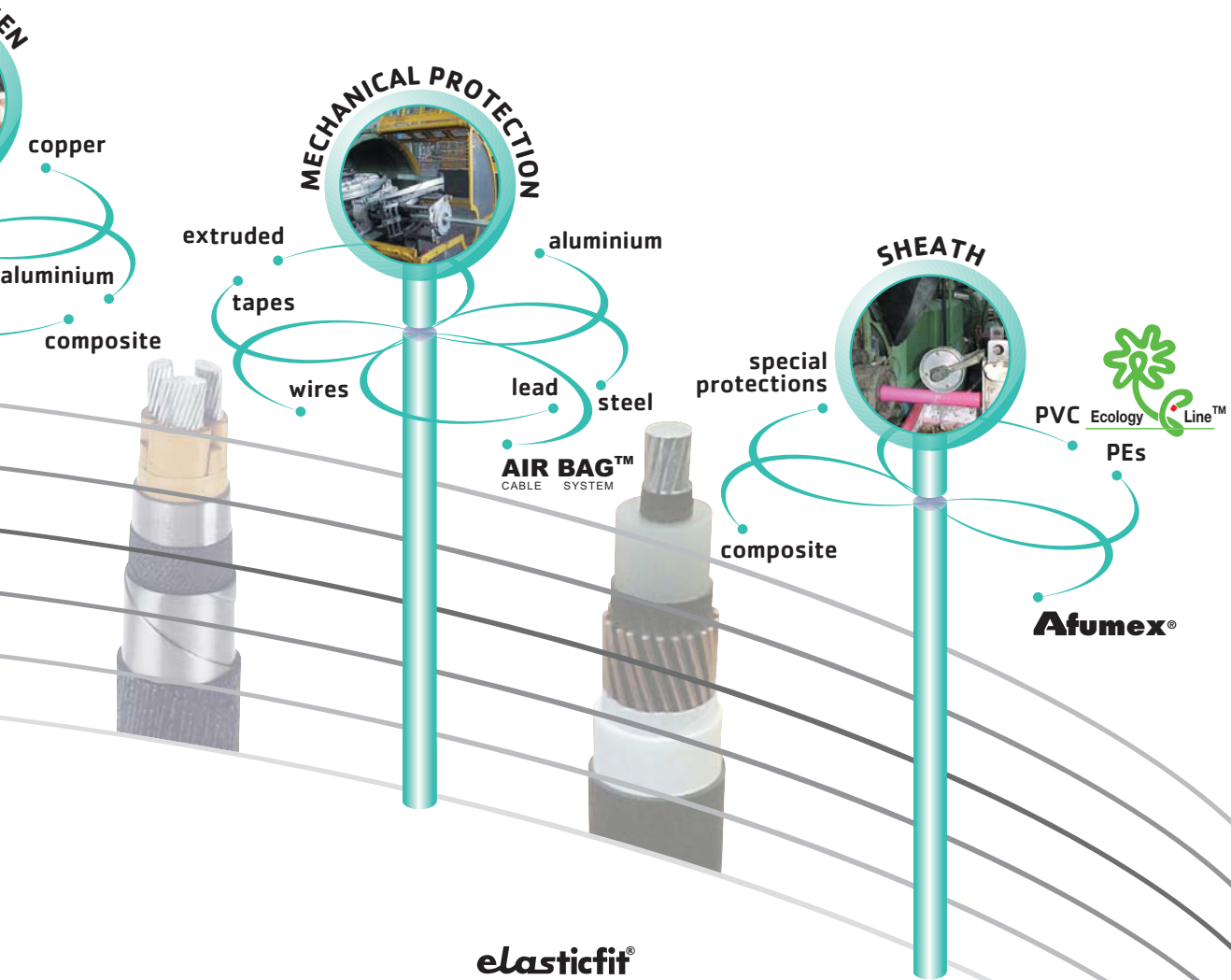
Prysmian is one of the worldwide leading players in the manufacture of an extensive range of cables, conductors, components and accessories for underground and overhead distribution systems. The adopted design and process technologies ensure continued service reliability and long term performance.

Cables can be supplied in single core, three-core or bundled formation, with solid/stranded, round/shaped, aluminium, copper or alloy conductors and different types of insulation materials (polymers, elastomers and paper). All cables incorporate a metallic screen, which may consist of wires, tapes or laminates of different materials (copper, aluminium, composite). Depending upon cable construction, the insulated cores are either individually or collectively screened. Where necessary water blocking elements can be included to limit moisture migration. Mechanical protection, where appropriate, is provided through alternative traditional metallic or innovative polymeric solutions. Outer sheaths and finishes are available in PVC, PE of different density, **Afumex®** materials – for a reduced emission of smoke and corrosive gases in the case of fire – and with special protections against termites and other boring insects.

Accessories play a vital role in a power system. Prysmian has gained expertise in the design, manufacture and testing of products across all voltages during many years of partnership with customers. Prysmian offers a comprehensive range of accessories for glanding, jointing, connecting and terminating. The range includes joints (also transition and trifurcating joints), terminations (for both indoor and outdoor use), connectors, glands, cleats and fixings, link boxes, tooling, fused equipment units and resins.

Prysmian also provides engineering services capable of fulfilling any power system specification or requirement and of delivering customised solutions.





Total Quality Commitment



Prysmian is characterised by a competent and experienced approach to global solutions with state-of-the-art resources applied to research, engineering and manufacturing. Within the Prysmian Group, there are manufacturing facilities dedicated to the production of LV cables, accessories and components in all five continents, and a single business unit, which gathers all critical functions in a co-ordinated management structure with common operative policies. The main advantages of this organisation are: great manufacturing flexibility, strong engineering expertise, advanced services and **total quality commitment**.

The Prysmian brand has always been a guarantee for the supply of products and services based on worldwide excellence in quality standards. Prysmian has a built-in multi-step quality assurance program, which covers the entire production process from cable design and raw materials purchasing, to final inspection and testing documentation.

Prysmian business locations and manufacturing sites are certified according to **ISO 9001 Quality Management System standards** for their specific activities and products and **ISO 14001 Environmental Quality standards**.

Standards and Recommendations

Prysmian products are designed to comply with all major national and international standards (e.g. **IEC, CENELEC, BS, CEI, DIN VDE, ICEA, IRAM, NBR, NF, SABS, SFS, TSE, UNE, UTE, NBN, AEIC, ANSI, AS/NZS** etc.) and with customer's specific requirements.

Besides, thanks to an undisputed expertise developed over decades in servicing all major utilities anywhere in the world, Prysmian relies on a long-standing tradition of participation and on a strong presence within international scientific bodies— **IEC, CENELEC** and **AEIC** among others – to develop relevant standards, technical recommendations and guidelines.



References Major Customers

Americas

Canada	Hydro Quebec, ENMAX, Toronto Hydro
USA	Nevada Power, Florida Power & Light, Georgia Power, Exelon, National Grid, ConEdison, Entergy, Detroit Edison, Keyspan, ...
Argentina	Edenor, Edesur, Epe de Santa Fé
Brazil	Coelba, Cosern, Coelce, Eletropaulo, Light, Eletronorte, ...
Chile	Chilectra, CGE
Colombia	Codensa, EEP, ISA
Mexico	CFE, LyFC
Peru	Edelnor, Tecsur
Uruguay	UTE
Venezuela	Electricidad de Caracas

Africa and M. East

Algeria	Sonelgaz
Libya	GEC
Morocco	ONE
Nigeria	NEPA
Tunisia	STEG
South Africa	Eskom
Lebanon	EDL
Kuwait	MEW
U.A.E.	ADWEA, DEWA, SEWA, FEWA

Europe

Austria	Wienström, EVN
Belgium	Electrabel
Czech Republic	SME, JME, PRE, STE, ZCE
France	EDF
Germany	RWE, HEW, e.on, EnBW
Hungary	ELMU, ÉMÁSZ, DÉMÁSZ, DÉDÁSZ, TITÁSZ, ÉDÁSZ, MVM
Italy	Enel, ACEA, AEM Milano, ACEGAS Trieste, AEC Bolzano
Netherlands	NUON, TZH, ESSENT, ENECO, DELTA, REMU
Romania	Electrica SA, Transelectrica
Scandinavia	Wattenfall
Slovakia	ZSE, SSE, VSE
Spain	Iberdrola, Endesa, Union Fenosa
Turkey	TEIAS, TEDAS EDM
UK	Western Power Distribution, GPU, East Midlands Electricity, Scottish and Southern, National Grid, Scottish Power, NEDL, United Utilities, SEEB, 24 Seven, Northern Ireland Electricity, ...

Asia

Brunei	DES
China	Tianjin Power Bureau, Beijing PSB, Lahsa PSB, Qindao PSB, Daqing PSB, Shanghai PSB, Nanjing PSB...
Hong Kong	CLP Power, Hong Kong Electric (HEC)
Malaysia	TNB, SESB, SESCO
Singapore	PowerGrid, Singapore Power
Thailand	MEA, PEA
Vietnam	HCMC PC, Hanoi PC

Australia

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