



Highest concentration of competence

Material producers and suppliers

Only by the development of new, innovative high performance materials can components, and thus power plants, be improved. The big enterprises closely cooperate with a huge number of suppliers, who e.g. produce bolts, flanges, valves etc. according to specifications. This in total brings the innovation necessary to further the development of power plants.

Plant manufacturers and manufacturers of components

Plant manufacturers and manufacturers of components have nearly all the competences necessary to set up turnkey power plants, produce single components, like steam generators and gas cleaning plants, as well as big components (gas turbine, steam turbine, compressors, pumps and pipes).

Energy providers and power plant operators

Power utilities have the task to guarantee an efficient, safe and environmentally-friendly energy supply, with a suitable energy mix, from their power plants. In addition a highly flexible operation mode is necessary. The requirements of the market directly regulate the requirements of the product "power plant of the future".

Engineering, service and maintenance companies

Engineering companies optimize construction, development and planning processes for the "power plant of the future". With innovative test methods service and maintenance companies ensure the product quality of single components as well as of the plant itself. Only this way, a high quality in construction, operation and service of all kind of power utilities and their flexible adaption regarding changing basic conditions, is guaranteed.

Universities and external university research as well as apprenticeship and further educational institutions

In the field of energy research the Rhine Ruhr Power Cluster has a pre-eminent collaborative network. More than 25 universities, colleges and external university research centers cooperate in the principle-based and application-oriented research in the area of energy and power plant technology. This offer of services is ideally completed by a multitude of educational institutions – from the kindergarten to technical college to the university – which offer a wide range of vocational training and advanced training measures.

"Beside technical subjects the Rhine Ruhr Cluster supports and promotes, with high priority, vocational training and advanced training measures as well as training and qualifying craftsmen. These main topics of the future definitely contribute to the fact that we can strengthen and further develop our leadership of innovation and technology."

Horst Schmoll, Site Director, Siemens AG in Mülheim

Dr Manfred Kehr

Balcke-Dürr GmbH

BET GmbH

Bilfinger Piping Technologies GmbH

CAD Schroer GmbH

Deutsche Vereinigung für Verbrennungsforschung e.V.

Deutsches Zentrum für Luft- und Raumfahrt e.V. (DLR)

ee energy engineers GmbH

ef.ruhr GmbH

EWEX-Engineering GmbH & Co. KG

FDBR e.V.

Forschungszentrum Jülich GmbH

Fraunhofer – Institut UMSICHT

GEA Energietechnik GmbH

GSI – Gesellschaft f. Schweißtechnik International mbH Niederlassung SLV Duisburg

GTT Gesellschaft für Technische Thermochemie und -physik mbH

HAMON ENVIROSERV GmbH

Haus der Technik e.V.

Hitachi Power Europe GmbH

IFE SYSTEMS GmbH

InPro-Consult GmbH

Kraftanlagen München GmbH

KROHNE Messtechnik GmbH

KSB Aktiengesellschaft

LVQ-WP Werkstoffprüfung GmbH

MAN Diesel & Turbo SE

M+W Germany GmbH

PSIPENTA Software Systems GmbH

RRI Rhein Ruhr International GmbH Ingenieurgesellschaft

RWE Power AG

RWTH Aachen

SAG GmbH

Salzgitter Mannesmann Forschung GmbH

Siemens Energy – Fossil Power Generation Division New Technologies

STEAG GmbH

ThyssenKrupp VDM GmbH

TÜV NORD Systems GmbH & Co. KG

TÜV Rheinland Industrie Service GmbH

V&M Deutschland GmbH

VGB PowerTech e.V.

Zenergy Power plc



Cluster Rhine Ruhr Power

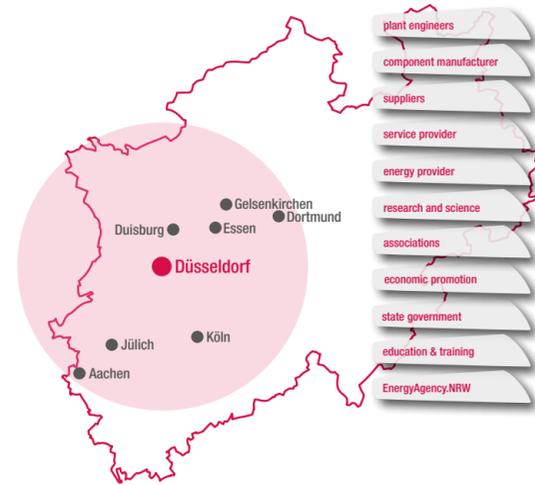
We are the Power Plant of the Future



Rhein Ruhr Power e.V.
c/o EnergieAgentur.NRW
Roßstraße 92
40476 Düsseldorf
info@rhein-ruhr-power.net
www.rhein-ruhr-power.net

“Nowhere else in the world a partner structure, offering such a wide range of services, in a more densely populated area, can be found. These innovative, affiliated companies contribute to consolidating the technological capabilities, in the field of innovative power plant technology in our federal state, to bundle it as an umbrella brand and to position it internationally.”

Svenja Schulze, Minister of Science in North Rhine-Westphalia



Together we are strong!

The Cluster Rhine Ruhr Power joins the efforts of all relevant companies of the German power plant technology and supports them in their re-orientation for the future energy supply. The Cluster is the primary contact for national and international decision-makers from politics and economy.

As an active network of companies and facilities from plant engineering, power plant-related materials and process engineering, the electrical engineering as well as automation and control engineering, the Cluster covers the value creation chain as well as the life time cycle of fossil-fired large-scale power plants and solar tower power plants.

Nationwide and local active public utilities represent the energy-industrial side. The gathering of knowledge is further aided by associated universities, research facilities, training colleges, continuing education colleges, associations and chambers of commerce as well as marketing and consulting agencies.

Thus, the companies and utilities organized in the Rhine Ruhr Cluster gain from these diverse synergy and spin-off effects, which contributes to a successful positioning in the globally growing market of energy supply.



“In the Rhine and Ruhr area the right climate exists to develop power plants for the future. In this region power plant experience and innovative capacity, engineering and design capabilities as well as financial strength come together. Economy and research have always been working as reliable partners for the modernization of energy supply.”

Dr Johannes Lambertz, Chief Executive Officer, RWE Power AG

Key targets of the Cluster

- **Innovation manager** of research and development for solar thermal power plants and for the retrofitting of fossil energy systems to “partner systems” of the increasingly regenerative oriented energy supply.
- **Technology management** at all levels of the power plant of the future: from the construction of a complete power plant, and its components, to plant operation.
- **Positioning of the region Rhine Ruhr** as a worldwide leading region of technological capability and center of attraction for companies and specialists.

“Germany’s energy transition will only be successful, if economy, science and politics consolidate their efforts. The Rhine Ruhr Power project with its power plant of the future is an important partner in order to achieve the ambitious climate protection targets with renewable energy sources.”

Dr Frank-Michael Baumann, Director, EnergyAgency.NRW

“With the power plant of the future the partners of the Rhine Ruhr Power Cluster develop – along the entire value creation chain – a power plant technology for a safe energy supply. It is guaranteed by the joined technical experiences of power plant operators that power generation in the future is handled environmentally-friendly, sustainable and efficiently.”

Erland Christensen, Managing Director, VGB PowerTech e.V.

Power Plant of the future

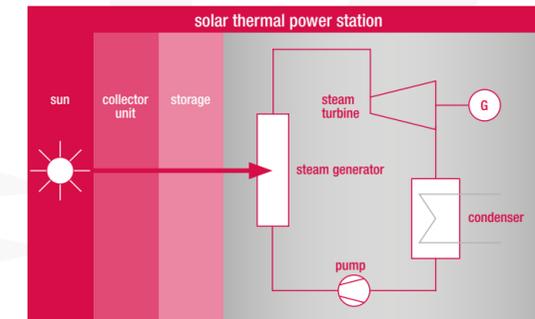
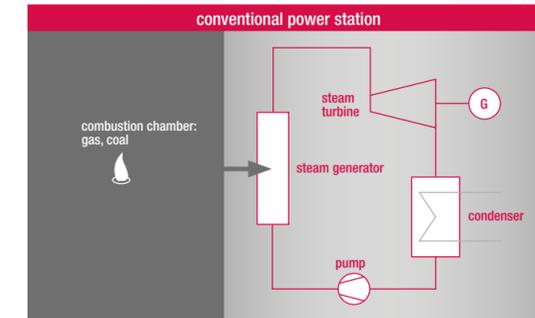
The worldwide increasing power demand requires an environmentally-friendly, economic and safe energy supply. Therefore, there is a considerable need for an increasing extent of renewables in the next decades. The concomitant high extent of fluctuating power input has to be compensated accordingly.

There are considerable technological challenges for existing as well as for new gas and coal-fired power plants. In addition to high efficiency and low pollutant emissions a high flexibility is required above all. To realize such a sustainable and intelligent energy supply system the Cluster partners develop the key technologies for the “power plant of the future” with flexible, high-efficient and low on CO₂, fossil-fired power plants as well as solar tower power plants.

The “power plant of the future” will help to cope with the challenges of the worldwide growth in population, the increasingly higher living standards and the pressing changes in climate with an environmentally-friendly, economic and safe energy supply.

“The power plant of the future is an exceptionally important component for the transformation of our energy supply system.”

Professor Dr Klaus Görner, University Duisburg-Essen



- Market leadership
- Leadership of technology
- Leadership of innovation
- High organizational degree
- Grown partnerships with distinctive co-operation structure
- Highest concentration of competence along the entire value creation chain
- Major and medium-sized companies are worldwide leaders in their field
- Wide variety of suppliers and service providers
- 25 universities and technical colleges, Max-Planck-Institute, Fraunhofer Institute
- 120-years experience in distribution, construction and operation of power plants

“Interacting, highly adjustable fossil power plants and solar thermal power plants make a significant contribution to grid stability and the security of supply.”

Professor Dr Bernhardt Hoffschmidt, Co-Director, Institute of Solar Research of the German Aerospace Centre