



**The energy infrastructure is becoming increasingly complex. In the past, all users were purchasers of electricity and gas or heat. Now a much greater variety of technologies is available such as heat pumps, home heat and power plants, solar-powered boilers and wind turbines.**

Designers or operators of energy infrastructure ask themselves questions like: what technologies can be best applied, where does capacity need to be situated and what is the best way of connecting customers? Additionally, there are questions such as:

- Has a heat energy network been laid out with optimum cost control in mind?
- Is a process of divestment in the existing gas network ongoing?

These are questions that require consideration by designers and operators of new and existing energy infrastructure. For example owners of heat energy distribution networks, operators of industrial estates where there is a dedicated power generation plant, project developers associated with (green) residential districts, managers of building complexes, etc.

Kiwa Technology can draw up a technical/cost and benefits analysis of both simple and complex energy delivery systems during the concept and design phase. The configuration for an energy delivery system is optimised based on a block diagram. This clarifies the economic feasibility of the possible variants in systems of this type.

In order to answer the questions mentioned above, the relevant options and energy demand must be identified first. We use this information to perform the calculations and provide advice on the best choice and the associated costs. These results provide information on the most important parameters. If required, the models can be refined further at a later stage.

### **Optinet**

The OptiNet application is used for this. The structure of the energy delivery facility is laid out and clarified with the aid of a block diagram. The resulting model is used to determine the optimum capacities that are required and the times when energy generation and conversion devices need to switch in. Possible transportation and storage can also be optimised. The calculations are based on linear programming.

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OptiNet has been developed by Kiwa Technology in house. This means that the application can be adapted as necessary in order to create an even better fit with your requirements.

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