1. **Algorithm adaptability value data**

The data in excel is a comparison of the fitness values of the improved DE algorithm and the original DE algorithm. Correlation with section 5.5 in the text verifies the advantages of the improved DE algorithm.

1. **Demand response data**

This data is a comparison of the results for the three loads involved in the DR and is relevant to sections 2.1, 2.2 and 5.3 in the text. These data show that the IDR used in the paper has a good ability to cut peaks and fill troughs.

1. **Dispatch results data**

These data present the results of the solution for the participation of three energy sources, electricity, gas and heat, in the IES dispatch. Sections 5.1 and 5.2 in the text are relevant. The analysis of the dispatch results in section 5.2 is further detailed.

1. **The output of PV, WT and Electricity, gas, heat load**

The data source for the arithmetic example is a community in Jinan, Northern China. The predicted output of loads, WT, and PV is represented by a typical day of winter in this community. Among them, the WT output, PV output, and electricity, gas, and heat load curves are shown in the excel. With these specific input data, the reader will have an easier time reproducing this paper.

1. **Date of different carbon trading parameters**

In the stepped carbon trading model, different parameters of the carbon trading mechanism also have an impact on the economic dispatch of IESs, which is analyzed in this paper from three aspects: carbon trading base price, carbon emission interval length and carbon price growth rate. Figure 6 shows the impact of the three parameters on the total operating cost and total carbon emissions of the system. This excel file is the specific data for Figure 6 in the text. The impact of different carbon trading factors on the IES dispatch results is represented in detail.