1. A method for analyzing and screening electricity consumption behavior of demand side users, characterized by comprising the following steps:

acquiring original power load data of users in a target area, and identifying abnormal data segments in the original power load data by using a feature detection method based on information entropy and clustering distance;

inputting the identified normal data into a competitive learning network, extracting the fundamental form characteristics of historical normal data and establishing a standard characteristic curve, carrying out numerical correction on the abnormal data segment according to the standard characteristic curve, and outputting the corrected load data;

carrying out multidimensional feature extraction and weighting on the modified load data, constructing a weighted matrix of comprehensive power consumption information of users, and clustering and dividing the weighted matrix by using a clustering algorithm based on local density distribution to obtain a electricity consumption behavior pattern category;

calculating the comprehensive price sensitivity of users at the time of electricity price conversion based on the category of electricity consumption behavior mode, inputting a multi-objective optimization screening model, and solving and determining the list of screened users and the suggested response load.

2. The method for analyzing and screening electricity consumption behavior of demand side users according to claim 1, wherein the process of identifying the abnormal data segment comprises:

feature points are selected based on information entropy, and the feature data cluster formed by feature points is normalized clustering and information gain is calculated iteratively by using the principle of minimum distance;

the data segment whose minimum distance from the center of the existing characteristic data cluster exceeds the abnormal threshold and whose information gain is low after merging is judged as abnormal data segment.

3. The method for analyzing and screening electricity consumption behavior of demand side users according to claim 1, wherein the establishing standard characteristic curve comprises:

training Kohonen competitive learning network, adjusting neuron weights through competition mechanism to fit the historical normal load data distribution, and extracting the winning neuron weight vector as the standard characteristic curve.

4. The method for analyzing and screening electricity consumption behavior of demand side users according to claim 1, wherein the process of numerical correction of the abnormal data segment comprises:

calculating the ratio of the original power load data to the pre-ordered sampling points of the standard characteristic curve at the peak-valley moment of the daily load curve, and correcting the standard characteristic curve value at the current moment by using the reciprocal of the arithmetic average value of the ratio.

5. The method for analyzing and screening electricity consumption behavior of demand side users according to claim 1, wherein the process of constructing the weighting matrix of comprehensive power consumption information of users comprises:

carrying out range standardization treatment on the extracted load rate, level coefficient, valley coefficient and peak coefficient;

according to the proportion, information entropy and difference coefficient of each index in the user sample, the entropy weight method is adopted to determine the weight and generate the weighting matrix of the user's comprehensive electricity consumption information.

6. The method for analyzing and screening electricity consumption behavior of demand side users according to claim 1, wherein when the clustering algorithm performs clustering division, the process of selecting an initial clustering center comprises:

the average distance of the sample points is taken as the truncation radius to count the local density, and the points with the highest density are selected as the initial clustering centers in turn according to the principle of maximum local density until the preset number of categories is met.

7. The method for analyzing and screening electricity consumption behavior of demand side users according to claim 6, wherein the clustering algorithm determines the optimal number of clusters by minimizing the clustering effectiveness index, and the clustering effectiveness index is:

the arithmetic mean of the maximum ratio of the sum of the average distances within the class of each cluster and other clusters to the center distance between classes.

8. The method for analyzing and screening electricity consumption behavior of demand side users according to claim 1, wherein the calculation process of comprehensive price sensitivity comprises:

the ratio of the load change rate to the electricity price change rate at the time of electricity price conversion is calculated as the single point price sensitivity, and it is weighted and summed by the weight coefficient.

9. The method for analyzing and screening electricity consumption behavior of demand side users according to claim 1, wherein the multi-objective optimization screening model adopts a minimization objective function and consists of two weights:

screen the ratio between the weighted average reciprocal of comprehensive sensitivity and the reciprocal of maximum comprehensive sensitivity of user groups, and the ratio between the total response quotation and the maximum total quotation of the project.

10. The method for analyzing and screening electricity consumption behavior of demand side users according to claim 9, wherein the constraint conditions of the multi-objective optimization screening model include:

screen the weighted average comprehensive price sensitivity of user groups and the equality constraint of responding to the total quotation, suggest the upper and lower bounds of the total response load, and the binary variable constraint of user selection state.