Appeal decision

Appeal No. 2016-10555

Kyoto, Japan
Appellant KYOCERA CORPORATION

Tokyo, Japan
Patent Attorney SUGIMURA, Kenji

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The case of appeal against the examiner's decision of refusal of Japanese Patent Application No. 2012-157862, entitled "MANAGING DEVICE, DISPLAY DEVICE, DISPLAY PROCESSING METHOD, AND IMAGE CREATING PROGRAM" (the application published on February 3, 2014 Japanese Unexamined Patent Application Publication No. 2014-21616) has resulted in the following appeal decision.

Conclusion

The appeal of the case was groundless.

Reason

No. 1 History of the procedures

The patent application of the case was filed on July 13, 2012, and the history of the procedures is as follows.

As of September 4, 2015: Notice of reasons for refusal

November 9, 2015: Submission of written opinion and written amendment

As of April 7, 2016:	Examiner's decision of refusal
July 12, 2016:	Submission of notice of appeal
As of April 7, 2017:	Notice of reasons for refusal by the body
June 8, 2017:	Submission of written opinion

No. 2 The Invention

The invention relating to Claim 1 of the patent application (hereinafter referred to as the "Invention") is acknowledged as follows, as specified by the matters described in Claim 1 according to the scope of claims amended by the written amendment dated November 9, 2015.

"[Claim 1]

A managing device that creates a graph image representing energy variation on a consumer,

including a control unit which creates, as the graph image, a transition state of at least one of the amount of power sold, the amount of power purchased, the amount of power generated, and the amount of power consumed, and superimposes a transition state of the amount of power stored in a storage battery on the graph image with a common time axis,

the graph image including two ordinate axes with two different scales, which represents absolute values for the above four elements, while representing relative values with respect to the capacity of the storage battery for the amount of power stored in the storage battery."

No. 3 Cited Document

1. Regarding Cited document 1

Meanwhile, the following matters are described in Japanese Unexamined Patent Application Publication No. 2011-180807 (hereinafter referred to as "Cited document 1") cited in the reasons for refusal issued by the body on April 7, 2017. (The underlines are applied by the body.)

(A) "This invention relates to a display device of energy consumption which displays energy consumption in a building to be monitored, and a management system of energy consumption including the display device." ([0001])

(B) "The house H, as a building, in the example includes a measurement sensor 11, as

energy consumption measurement means, a distribution board measurement device 12, a gas/water-supply measurement device 14, and a display monitor 2, as a display device for energy consumption." ([0060])

(C) "The house H also includes a solar power generator 5, as a power generation device. The solar power generator 5 directly converts sunlight, as solar energy, into electricity by use of a solar battery, to generate electric power. The solar power generator 5 can supply power only during the time when sunlight is available.
DC power generated by the solar power generator 5 is converted into AC power by a power conditioner 51, and input to a distribution board 120.

The house H is equipped with various units of energy load equipment 7A-7E, which operate with electric power; for example, an air conditioning device 7A such as an air conditioner, a lighting device 7B such as a lighting fixture or a ceiling light, and a home appliance 7C such as a refrigerator or a television.

... omitted ...

The measurement sensor 11 is installed as energy consumption measurement means for measuring power consumption of the energy load equipment 7A-7C.

... omitted ...

The measurement values measured by the measurement sensor 11, ... and the distribution board measurement device 12 are transmitted to an aggregate management device 13 via wireless or wired communication means in the house H.

The aggregate management device 13 includes a communication unit for transmitting/receiving data, and a data accumulation unit which records data, such as the received measurement values. The data accumulation unit uses storage devices, such as a RAM (Random Access Memory), a hard disk, or an optical disk, appropriately.
The data of the measurement values recorded on the data accumulation unit are saved at predetermined intervals set in advance, or are saved with the time measured by the measurement sensor 11, transmission time of the measurement sensor 11, or receiving time of the aggregate management device 13, as time history, so that the measurement time can be specified later." ([0066]-[0082])

(D) "The display monitor 2 displays the measurement values recorded in the data accumulation unit of the aggregate management device 13, the measurement values accumulated in the management server 3, arithmetic values based on the measurement values, and statistical values statistically processed for evaluating energy consumption.

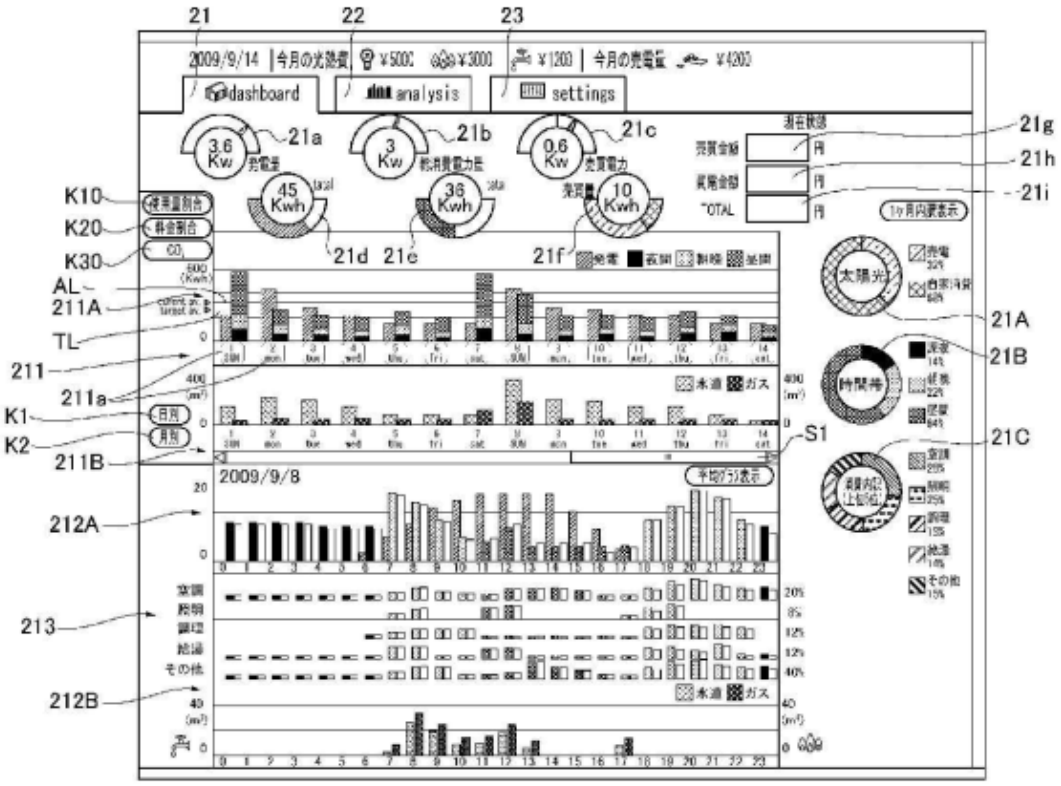
... omitted ...

We will next describe in detail the display monitor 2 as a display device for energy consumption of the example.
In this example, a display of a personal computer is used as the display monitor 2. A storage unit or an image processing unit for implementing the display monitor 2 is arranged in the body of the personal computer."
([0094]-[0097])

(E) "In this case, when a date button 211a of September 8, as a display position, is clicked, an hourly indicator part 212A, as a short-term indicator part, for power consumption from 0:00 to 23:00 on September 8, is displayed under a daily indicator part 211, as shown in FIG. 3.
The hourly indicator part 212A for power consumption is displayed as a color-coded bar graph above each time as well as the daily indicator part 211A. The bars are colored for visual recognition, in yellow for the amount of power generated, navy for late-night power from 23:00 to 6:00, blue for morning/evening power from 7:00 to 10:00 and from 17:00 to 22:00, and light blue for daytime power from 11:00 to 16:00.
At the right of the bars for hourly power consumption in the hourly indicator part 212A for power consumption, there are displayed corresponding average values of power consumption calculated based on past hourly power consumption for a predetermined period, for example, two weeks or 30 days, with white bars with outline, which are used for determining excessive use." ([0122]-[0124])

(F) "For example, when the house H has energy accumulation means, such as a storage battery, hot-water storage equipment, an electric vehicle, or a plug-in hybrid car, the amount of energy accumulated may be displayed, in the display monitor 2, on the same screen as the daily indicator parts 211A, 211B, as long-term indicator parts, and the hourly indicator parts 212A, 212B, as short-term indicator parts. The amount of energy accumulated can be confirmed at a glance, accordingly, while confirming whether the energy is utilized in a balanced manner.
The amount of energy accumulated can be displayed in the same way as, for example, the amount of power generated in the above example." ([0210]-[0211])

(G) "[FIG. 3]



今月の光熱費	This month's utility costs
今月の売電量	This month's amount of power sold
発電量	Amount of power generated
総消費電力量	Total power consumption
売買電力	Power sold/purchased
売買量	Amount of power sold/purchased
現在状態	Current status
売買金額	Amount of sales/purchase
買電金額	Amount of power purchased
円	YEN
使用量割合	Ratio of use
料金割合	Ratio of bill
発電	Power generation
夜間	Night-time
朝晩	Morning/Evening
昼間	Day-time
日別	Daily
月別	Monthly

水道　　Water supply
ガス　　Gas
平均グラフ表示　　Average graph representation
空調　　Air conditioning
照明　　Lighting
調理　　Cooking
給湯　　Hot water supply
その他　　Others
１ヶ月内訳表示　　Monthly breakdown
太陽光　　Solar power
売電　　Power sold
自家消費　　Self-consumption
時間帯　　Time zone
消費内訳（上位５位）　Consumption breakdown (Top 5)

"

According to (A) to (G), it can be recognized that Cited document 1 describes the following invention.

"A management system of energy consumption including a display device of energy consumption which displays energy consumption in a building to be monitored,

the building, a house H, including a measurement sensor 11, as energy consumption measurement means, a distribution board measurement device 12, a gas/water-supply measurement device 14, and a display monitor 2, as a display device for energy consumption,

the house H being equipped with a solar power generator 5, as a power generation device,

the house H being equipped with various units of energy load equipment 7A-7E, and having the measurement sensor 11 installed as energy consumption measurement means for measuring power consumption of the energy load equipment 7A-7C, and configured so that the measurement values measured by the measurement sensor 11, ... and the distribution board measurement device 12 are transmitted to an aggregate management device 13 via wireless or wired communication means in the house H,

the aggregate management device 13 including a communication unit for transmitting/receiving data, and a data accumulation unit which records data, such as the

received measurement values,

the display monitor 2 being configured to display the measurement values recorded in the data accumulation unit of the aggregate management device 13, the measurement values accumulated in the management server 3, arithmetic values based on the measurement values, and statistical values statistically processed for evaluating energy consumption, employing a display of a personal computer as the display monitor 2, the body of the personal computer containing a storage unit or an image processing unit for implementing the display monitor 2,

an hourly indicator part 212A for power consumption being displayed as a color-coded bar graph above each time, the bars being colored for visual recognition, in yellow for the amount of power generated, navy for late-night power from 23:00 to 6:00, blue for morning/evening power from 7:00 to 10:00 and from 17:00 to 22:00, and light blue for daytime power from 11:00 to 16:00, and

allowing, when the house H has energy accumulation means, such as a storage battery, hot-water storage equipment, an electric vehicle, or a plug-in hybrid car, the amount of energy accumulated to be displayed, in the display monitor 2, on the same screen as the hourly indicator parts 212A, 212B, as short-term indicator parts" (hereinafter referred to as "Cited invention")

2. Regarding Cited document 2

The following matters are described in Japanese Unexamined Patent Application Publication No. 2012-75224 (hereinafter referred to as "Cited document 2") cited in the reasons for refusal issued by the body dated April 7, 2017.

(H) "This invention relates to a technology of controlling transmission power and distribution line voltage, or conducting direct negotiation, in a power storage system of renewable energy, such as electricity generated by solar power or wind power in a detached house or the like."
([0001])

(I) "We will describe a simulation example of a control method of transmitted power relating to the example of the case.
FIG. 14 is a specific example of an estimate of solar power generation and wind power generation. Since solar power generation is affected by solar altitude or temperature, the maximum power generation curve of the month is used as a basis, and a ratio with the curve is estimated. FIG. 15 illustrates a representative example of south-facing

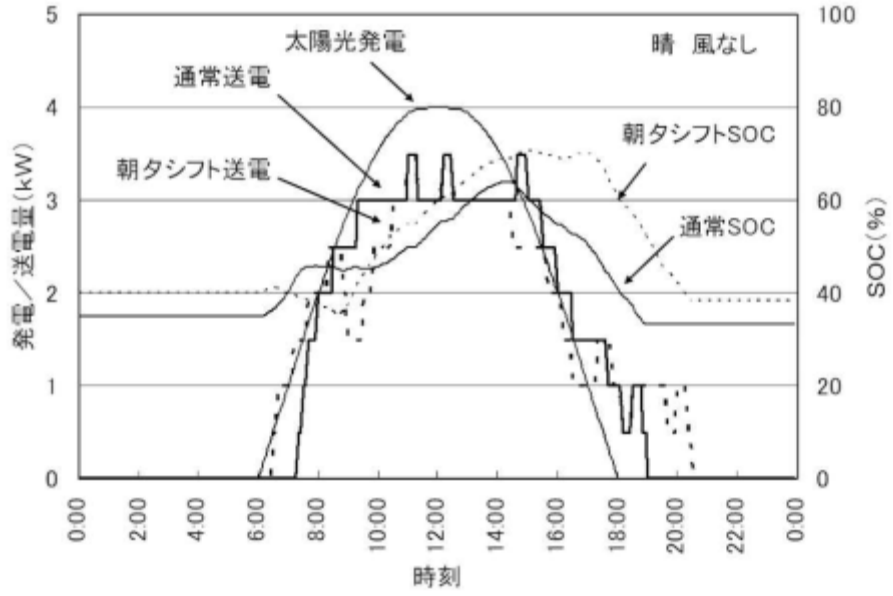
solar power generation.

As an example of the amount of transmitted power, 4kW solar power generation, 1kW wind power generation, a 10kWh (SOC (State Of Charge) operation range 30-75%) power storage device, 4kW grid integration inverter output, and 90% power transmission efficiency are set. The amount of power transmitted is simulated with SOC target value shown in FIGS. 16 to 20 and a control method of the grid integration inverter or the like shown in FIGS. 4 and 5.

Results of the simulation are shown in FIG. 21 for the case of clear and windless, in FIG. 22 for the case of cloudy and windless, in FIG. 23 for the case of clear and cloudy later and windless (slight power generation), in FIG. 26 for the case of clear and cloudy later and windy (middle wind), and in FIG. 27 for the case of clear and windless with transmission suppression.

According to the simulation results FIGS. 23 to 27, it can be confirmed that power transmission control has been conducted on the basis of the policy of the above target battery level, thereby allowing stable and high-quality transmission of energy generated by unstable solar power generation or wind power generation, and reducing suppression of power generation at the time of suppression of power transmission, to some extent." ([0053]-[0054])

(J) "[FIG. 21]



発電／送電量 Amount of power generated/Amount of power transmitted

時刻 Time

太陽光発電	Solar power generation
通常送電	Regular transmission
朝夕シフト送電	Morning-evening shift transmission
晴　風なし	Clear and windless
朝夕シフトＳＯＣ	Morning-evening shift SOC
通常ＳＯＣ	Regular SOC

"

According to (H) to (J), it can be recognized that Cited document 2 describes the following invention.

"A technical matter relating to expression modes of a graph which shows a result of simulation in a power storage system of renewable energy, such as electricity generated by solar power or wind power in a detached house or the like, on a common time axis, by superimposing a transition state of the amount of energy generated by solar power on a transition state of the amount of power accumulated, including two ordinate axes with different two scales ('Amount of power generated/amount of power transmitted (kW)' and 'SOC (%)'), wherein the amount of power generated by solar power generation is indicated by kW and the amount of power accumulated is indicated by SOC (%)."

No. 4 Comparison

The Invention is compared with Cited invention.

1. It is obvious that the "power consumption" and "amount of energy accumulated" displayed in the hourly indicator part in the Cited invention correspond to the "energy variation" in the Invention.　The "building, a house H" in the Cited invention obviously corresponds to the "consumer" in the Invention.

In the Cited invention, "The aggregate management device 13 includes a communication unit for transmitting/receiving data and a data accumulation unit which records data, such as the received measurement values, and the display monitor 2 displays the measurement values recorded in the data accumulation unit of the aggregate management device 13, the measurement values accumulated in the management server 3, arithmetic values based on the measurement values, and statistical values statistically processed for evaluating energy consumption."　It can be understood that the various pieces of data displayed on the display monitor 2 are generated by the aggregate management device 13, accordingly.

Therefore, it can be said that the "aggregate management device 13" in the Cited invention corresponds to the "managing device that creates a graph image representing energy variation" in the Invention.

It is obvious that the "aggregate management device 13" includes a control unit for executing various processes of information processing.

2. In the Cited invention, "the hourly indicator part 212A for power consumption is displayed as a color-coded bar graph above each time. The bars are colored for visual recognition, in yellow for the amount of power generated, navy for late-night power from 23:00 to 6:00, blue for morning/evening power from 7:00 to 10:00 and from 17:00 to 22:00, and light blue for daytime power from 11:00 to 16:00. When the house H has energy accumulation means, such as hot-water storage equipment, an electric vehicle, or a plug-in hybrid car, the amount of energy accumulated may be displayed, in the display monitor 2, on the same screen as the daily indicator parts 211A, 211B, as long-term indicator parts, and the hourly indicator parts 212A, 212B, as short-term indicator parts." Therefore, it can be said that the bar graph indicating a transition state of "the amount of power generated and the amount of power consumed" indicated in the hourly indicator part 212A of the Cited invention corresponds to the transition state of the "amount of energy accumulated" using the common time axis.

3. In the hourly indicator part 212A displayed on the display monitor 2 relating to the Cited invention, the "amount of power consumed" or the "amount of power generated" are indicated by a bar graph. The ordinate axis of the bar graph employs absolute values, as indicated with Kwh, in FIG. 3.

According to the results of comparison in the above 1. to 3., the Invention and the Cited invention correspond to each other as indicated below.

"A managing device that creates a graph image representing energy variation on a consumer,

including a control unit which creates, as the graph image, a transition state of at least one of the amount of power generated and the amount of power consumed, and displays a transition state of the amount of power stored in a storage battery on the graph image with a common time axis,

the graph image including an ordinate axis for the above elements, which

employs absolute values."

The Invention and the Cited invention are different from each other in the following points.

[Different feature 1]

In the Invention, the "transition state of the amount of power stored in a storage battery" is "superimposed" on the "graph image" representing the "transition state of at least one of the amount of power sold, the amount of power purchased, the amount of power generated, and the amount of power consumed." In the Cited invention, the "bar graph" indicating the "transition state of the amount of power consumed and the amount of power generated" and the "transition state of the amount of energy accumulated" in the "storage battery" are displayed on the "same screen" as the "hourly indicator part 212A."

[Different feature 2]

In the Invention, "the ordinate for the amount of power accumulated employs relative values with respect to the capacity of the storage battery," while the Cited invention does not specify it.

No. 5 Judgment

We will examine the above [Different feature 1] and [Different feature 2].

It is well-known, in the technical field, that an absolute value, such as "kWh" or "Wh," or a relative value, such as "SOC(%)," is used as a unit in a graph representing a transition state of the amount of power accumulated in accumulation means such as a storage battery, without specifically presenting a document.

As described in "2. Regarding Cited document 2" of "No. 3 Cited document," the "expression modes of a graph which superimposes a transition state of the amount of energy generated by solar power on a transition state of the amount of power accumulated, on a common time axis, including two ordinate axes with two different scales ("Amount of power generated/amount of power transmitted (kW)" and "SOC (%)"), wherein the amount of power generated by solar power generation is indicated by kW and the amount of power accumulated is indicated by SOC (%)" have been well-known before the filing date of the patent application of the case. Considering

also that it is not particularly notable that the relative value "SOC (%)" is used as a unit in a graph representing a transition state of the amount of power accumulated, it can be recognized that a person skilled in the art can easily achieve the Invention by applying the above well-known "expression modes of a graph" to the Cited invention, so that a customer may easily check the "transition state of the power consumption and the amount of power generated" and the "transition state of the amount of energy accumulated," in the Cited invention.

The Cited invention describes that the power purchased and the power sold are indicated in the indicator part ([0150]). It can be recognized that a person skilled in the art can also achieve displaying the amount of power purchased and the amount of power sold in the same display mode as the power consumption and the amount of power generated, as necessary.

Thus, the Invention could have been easily invented by a person skilled in the art, on the basis of the technical matters disclosed in Cited invention and Cited document 2.

The effect that can be achieved by the constitution of the Invention also could have been easily predicted by a person skilled in the art from the technical matters disclosed in Cited invention 1 and Cited document 2.

No. 6 Regarding the allegation in Written opinion submitted on June 8, 2017

The appellant of the appeal alleges as outlined below, in the written opinion submitted on June 8, 2017.

(1) Regarding superimposition of transition state (hereinafter referred to as "Allegation 1")

"Here, if the 'amount of energy accumulated' is additionally 'superimposed' on the hourly indicator part 212A indicating the energy consumption, it may be difficult to identify the cause of fluctuation of energy consumption by comparing energy consumption, such as power consumption, water consumption, and gas consumption. So, I consider even a person skilled in the art could not easily conceive of superimposing the 'power consumption' and the 'amount of energy accumulated' in Cited document 1.

... omitted ...

Here, if the ' transition state of amount of energy accumulated' is additionally 'superimposed' on the 'transition state of the amount of power generated,' it may be difficult to grasp the change of weather from the amount of energy generated.

So, I consider even a person skilled in the art cannot easily conceive of 'superimposing' the 'transition state of the amount of power generated' and the 'transition state of the amount of power accumulated' in the Cited document 1."

(1-1)

We will examine the "Allegation 1".

The appellant alleges that it may be difficult to "identify the cause of fluctuation of energy consumption" and to "grasp the change of weather from the amount of energy generated" if the "amount of energy accumulated" or the "transition state of the amount of energy accumulated" is "superimposed" on the "hourly indicator part 212A indicating the energy consumption". However, as is obvious from [FIG. 3] of the Cited document 1, it can be considered that it is possible to "identify the cause of fluctuation of energy consumption" or to "grasp the change of weather from the amount of energy generated," regardless of "superimposing" the "amount of energy accumulated" or the "transition state of the amount of energy accumulated" on the graph, so long as the "energy consumption" and the "amount of energy generated (the amount of power generated)" are displayed on the graph.

Even if it is difficult to visually "identify the cause of fluctuation of energy consumption" or "grasp the change of weather from the amount of energy generated" due to a graph presentation mode (graph type) which "superimposes" the "amount of energy accumulated" or the "transition state of the amount of energy accumulated" on the graph, it is only necessary to use a different graph presentation mode (graph type) from those of the "energy consumption" and the "amount of energy generated." A person skilled in the art uses different graph presentation modes (graph type) as necessary, as a design matter.

Therefore, the "Allegation 1" alleged by the appellant cannot be accepted.

(2) Regarding using relative values (herein after referred to as "Allegation 2")

"In Cited document 1, the amount of energy accumulated is displayed on the same screen in order to 'identify whether the energy accumulated is being used in a balanced manner when the building is equipped with energy accumulation means, such as a storage battery, hot-water storage equipment, an electric vehicle, or a plug-in hybrid

car' ([0047]).

In light of the above, I consider there is no choice but to indicate the amount of energy accumulated with absolute values, in Cited document 1. The reason why is that it may be difficult to identify whether the energy accumulated is being used in a balanced manner by comparing the amount of energy accumulated in the storage battery, hot-water storage equipment, electric vehicle, or plug-in hybrid car, each other, if the absolute values are not used for indicating the amount of energy accumulated.

In general, battery power is indicated relatively for allowing a user to grasp the battery level intuitively (at a glance), as is the case with the battery level of smartphone or personal computer. So, I consider the comparison will be difficult in determining whether the amount of energy accumulated in various types of energy accumulation means, as with Cited document 1, is being used in a balanced manner, without indicating the amount of energy accumulated with absolute values."

(2-1)

We will examine the "Allegation 2".

The appellant alleges that "there is no choice but to indicate the amount of energy accumulated with absolute values, in Cited document 1." However, it can be considered that both "absolute values" and "relative values" allow for grasping whether the energy accumulated in the energy accumulation means is being used in a balanced manner.

Thus, the "Allegation 2" alleged by the appellant cannot be accepted.

(3) Regarding combination of Cited documents (hereinafter referred to as "Allegation 3")

"Cited document 1 employs various types of energy accumulation means as described above, and I consider that absolute values are used for indicating the amount of energy accumulated. As described above, in Cited document 1, if absolute values are not used for indicating the amount of energy accumulated, it will be difficult to identify whether various types of energy accumulation means are being used in a balanced manner by comparing the amount of energy accumulated therein.

Cited document 2 does not employ various types of energy accumulation means, unlike Cited document 1, but relates to one power storage device (for example, the power storage device 3 shown in FIG. 3). Thus, in Cited document 2, relative values are used for indicating the battery level.

Therefore, I consider there is a disincentive in combining Cited document 2, which uses relative values for indicating the amount of energy accumulated, with Cited document 1, which uses absolute values for indicating the amount of energy accumulated."

(3-1)

We will examine the "Allegation 3."

The appellant alleges that "there is a disincentive in combining Cited document 2, which uses relative values for indicating the amount of energy accumulated, with Cited document 1, which uses absolute values for indicating the amount of energy accumulated." However, considering Cited document 1 which discloses that the "power consumption and the amount of power generated" and the "amount of energy accumulated" are "displayed on the same screen," and Cited document 2 which discloses that the "amount of power generated" and the "amount of power accumulated" are "displayed on the same graph," both documents disclose a common technical matter that displays "the amount of power accumulated and other quantitative matters (for example, 'power consumption and the amount of power generated')" on the same graph. It cannot be said that there is a disincentive in combining the documents.

Thus, the "Allegation 3" alleged by the appellant cannot be accepted.

No. 7 Closing

As described above, the Invention could have been easily invented by a person skilled in the art, on the basis of the technical matters disclosed in the Cited invention and Cited document 2, and the appellant should not be granted a patent for it under the provisions of Article 29-2 of the Patent Act.

The application should be rejected without examining inventions according to the other claims.

Therefore, the appeal decision shall be made as described in the conclusion.

July 27, 2017

Chief administrative judge: KANEKO, Koichi

Administrative judge: SATO, Tomoyasu

Administrative judge: UTAGAWA, Tsutomu