FIG. 1

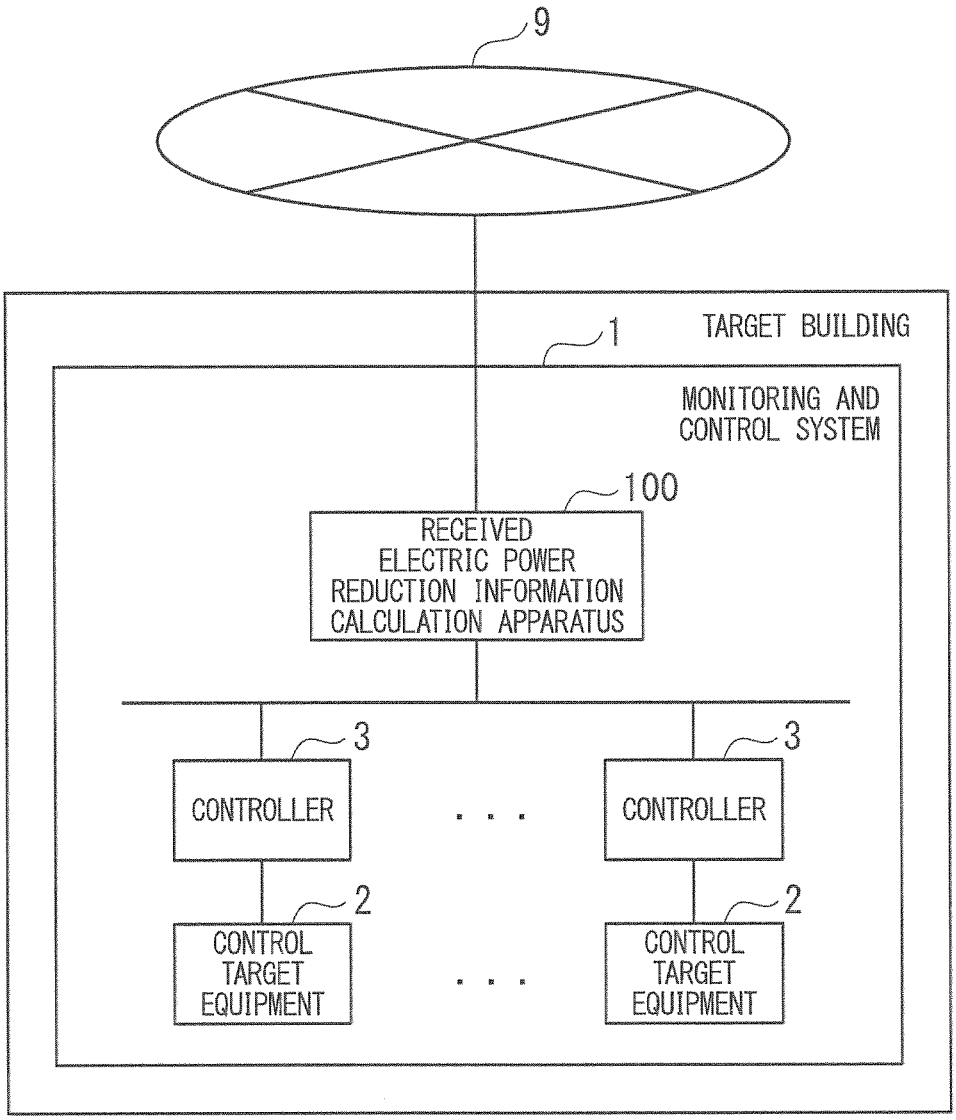
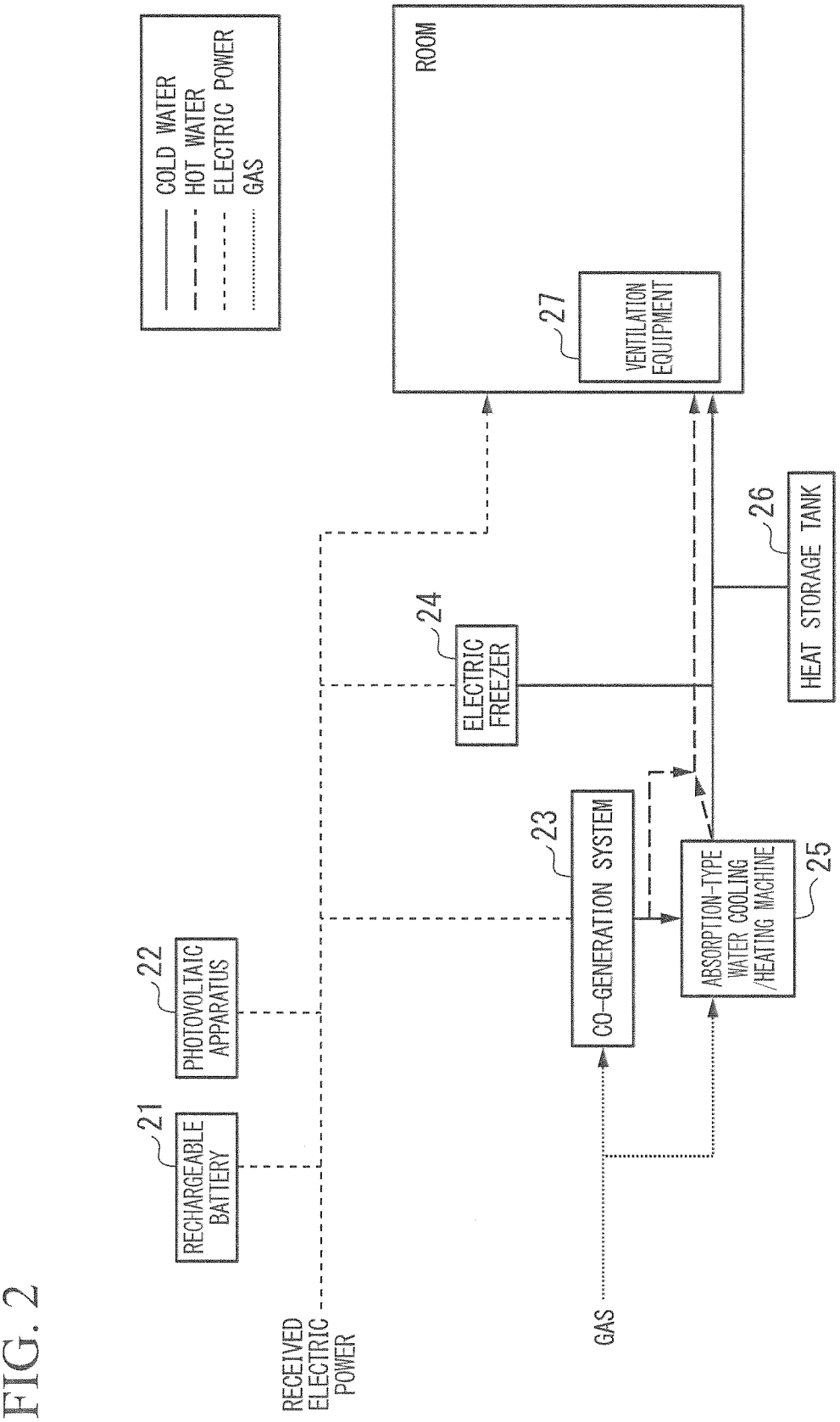

9
1
TARGET BUILDING
MONITORING AND CONTROL SYSTEM
100
RECEIVED ELECTRIC POWER REDUCTION INFORMATION CALCULATION APPARATUS
3
CONTROLLER
. . .
3
CONTROLLER
2
CONTROL TARGET EQUIPMENT
. . .
2
CONTROL TARGET EQUIPMENT

FIG. 2


COLD WATER
HOT WATER
ELECTRIC POWER
GAS
ROOM
27
VENTILATION EQUIPMENT
26
HEAT STORAGE TANK
24
ELECTRIC FREEZER
23
CO-GENERATION SYSTEM
25
ABSORPTION-TYPE WATER COOLING /HEATING MACHINE
22
PHOTOVOLTAIC APPARATUS
21
RECHARGEABLE BATTERY
RECEIVED ELECTRIC POWER
GAS

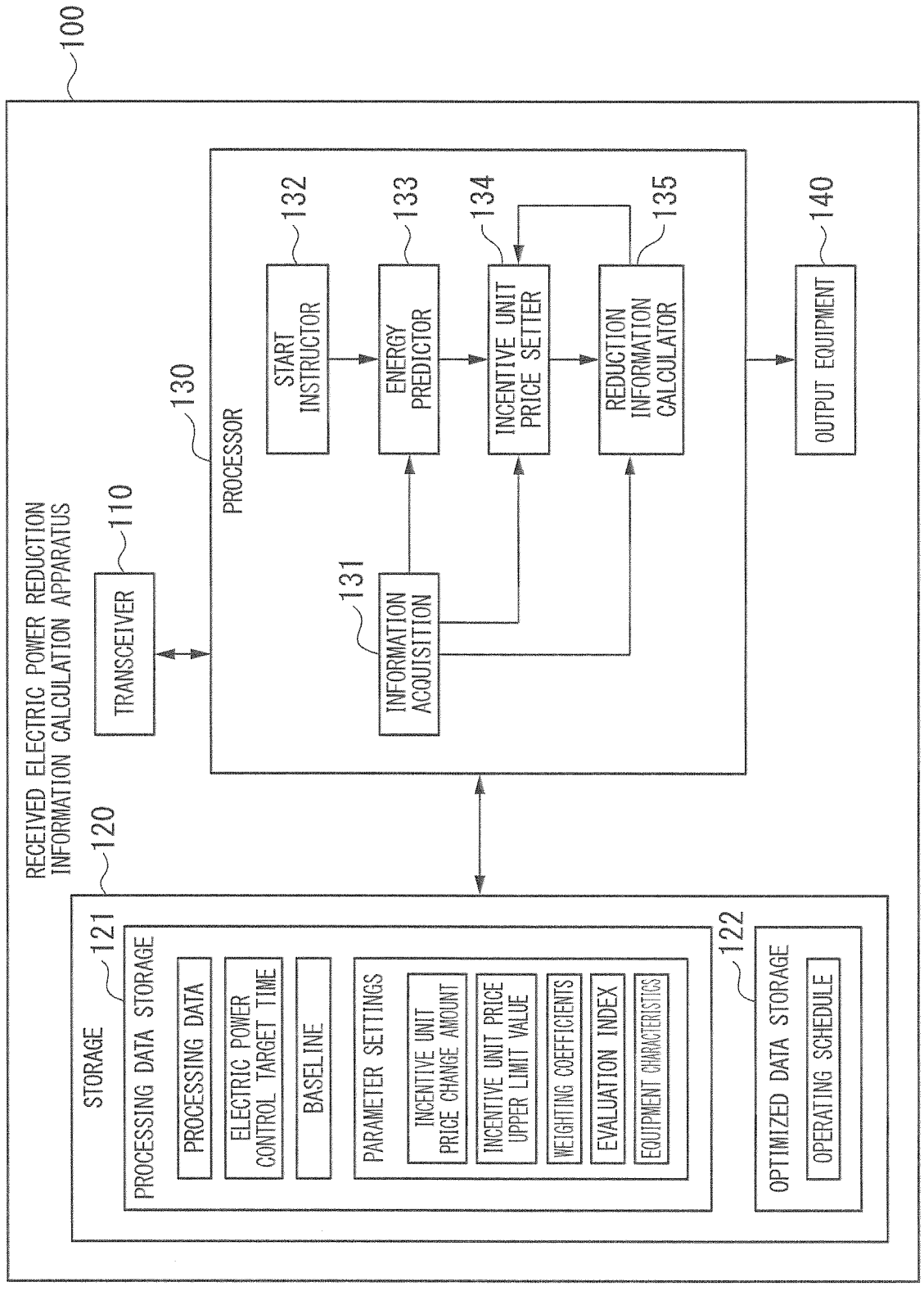

100
RECEIVED ELECTRIC POWER REDUCTION INFORMATION CALCULATION APPARATUS
110
TRANSCEIVER
130
PROCESSOR
131
INFORMATION ACQUISITION
132
START INSTRUCTOR
133
ENERGY PREDICTOR
134
INCENTIVE UNIT PRICE SETTER
135
REDUCTION INFORMATION CALCULATOR
140
OUTPUT EQUIPMENT
120
STORAGE
121
PROCESSING DATA STORAGE
PROCESSING DATA
ELECTRIC POWER CONTROL TARGET TIME
BASELINE
PARAMETER SETTINGS
INCENTIVE UNIT PRICE CHANGE AMOUNT
INCENTIVE UNIT PRICE UPPER LIMIT VALUE
WEIGHTING COEFFICIENTS
EVALUATION INDEX
EQUIPMENT CHARACTERISTICS
122
OPTIMIZED DATA STORAGE
OPERATING SCHEDULE

FIG. 3

FIG. 4

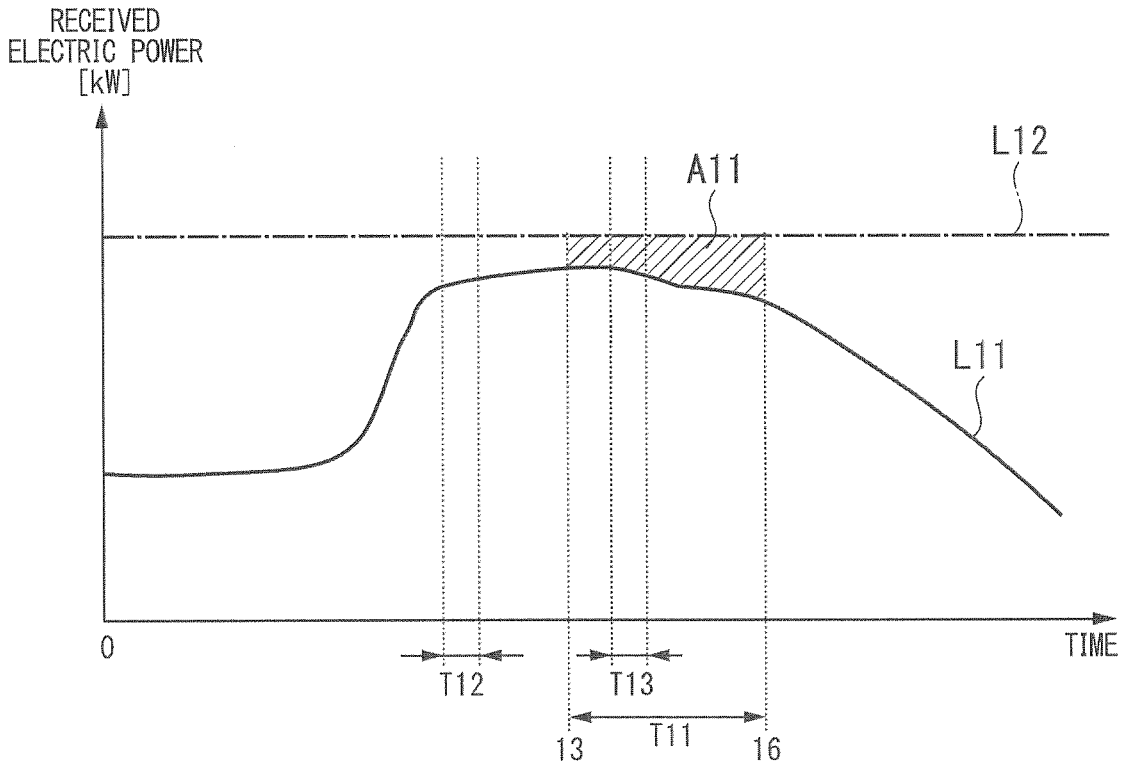

RECEIVED
ELECTRIC POWER
[kW]
A11
L12
L11
0
TIME
T12
T13
T11
13
16

FIG. 5

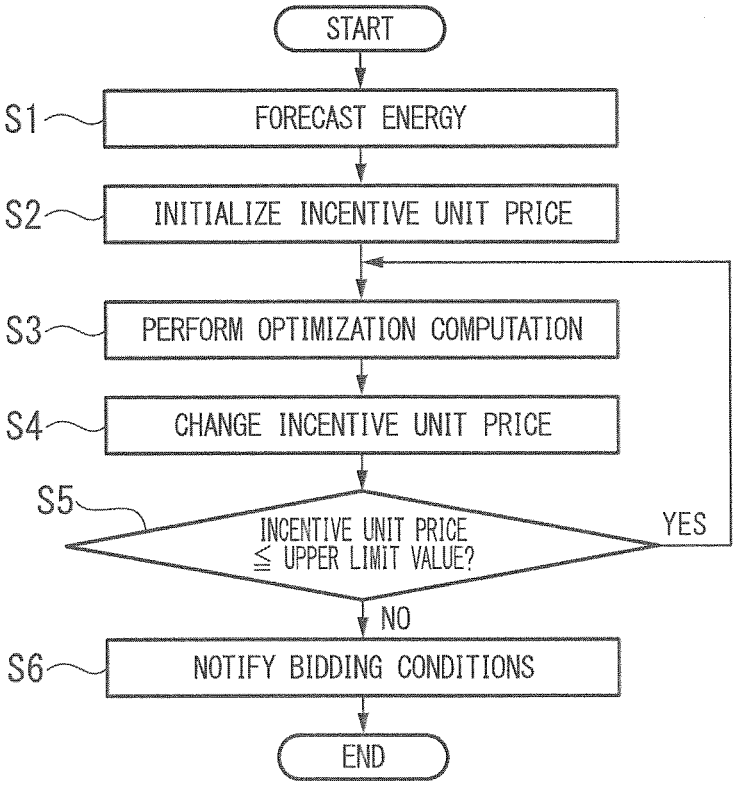

START
S1
FORECAST ENERGY
S2
INITIALIZE INCENTIVE UNIT PRICE
S3
PERFORM OPTIMIZATION COMPUTATION
S4
CHANGE INCENTIVE UNIT PRICE
S5
INCENTIVE UNIT PRICE
≦ UPPER LIMIT VALUE?
YES
NO
S6
NOTIFY BIDDING CONDITIONS
END

FIG. 6

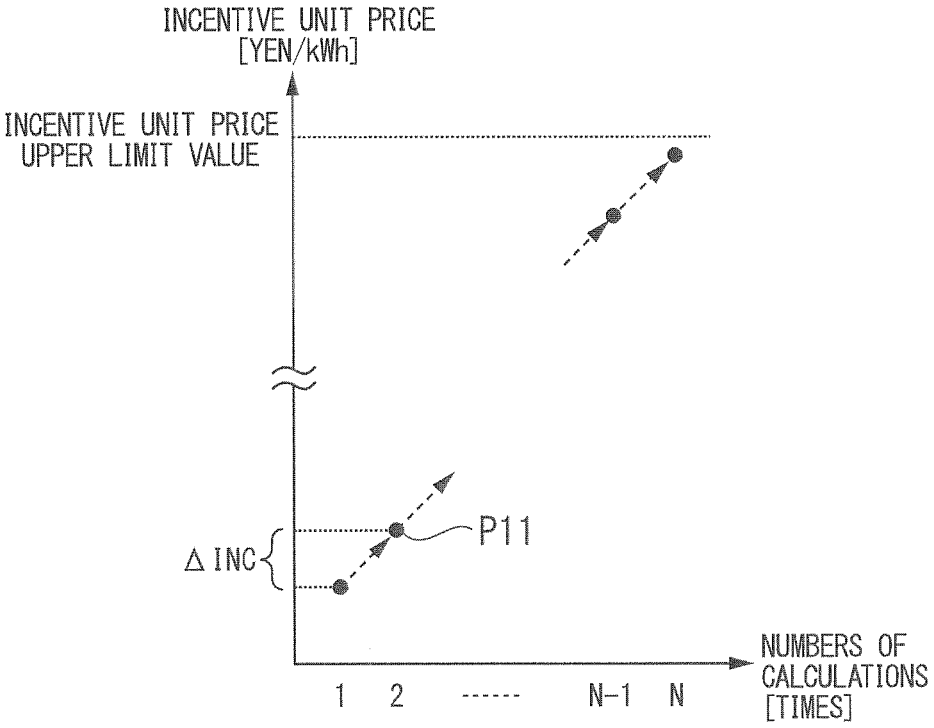

INCENTIVE UNIT PRICE
[YEN/kWh]
INCENTIVE UNIT PRICE
UPPER LIMIT VALUE
P11
Δ INC
NUMBERS OF
CALCULATIONS
[TIMES]
1 2 ----- N-1 N

FIG. 7

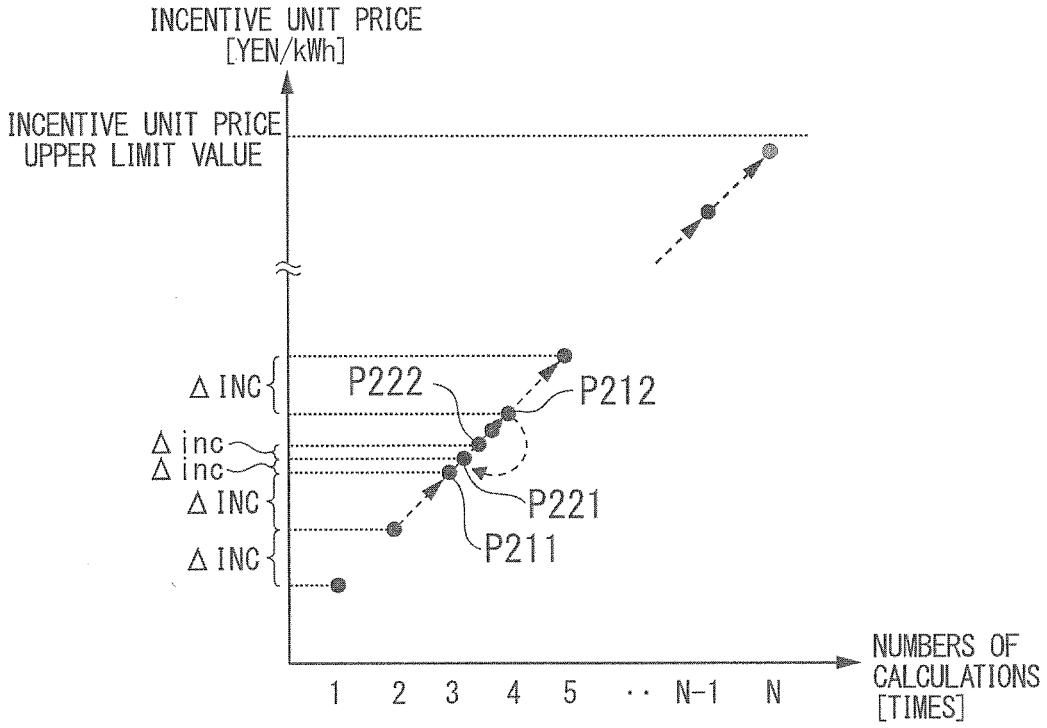

INCENTIVE UNIT PRICE
[YEN/kWh]
INCENTIVE UNIT PRICE
UPPER LIMIT VALUE
Δ INC
P222
P212
Δ inc
Δ inc
Δ INC
P221
P211
Δ INC
NUMBERS OF
CALCULATIONS
[TIMES]
1 2 3 4 5 ·· N-1 N

FIG. 8

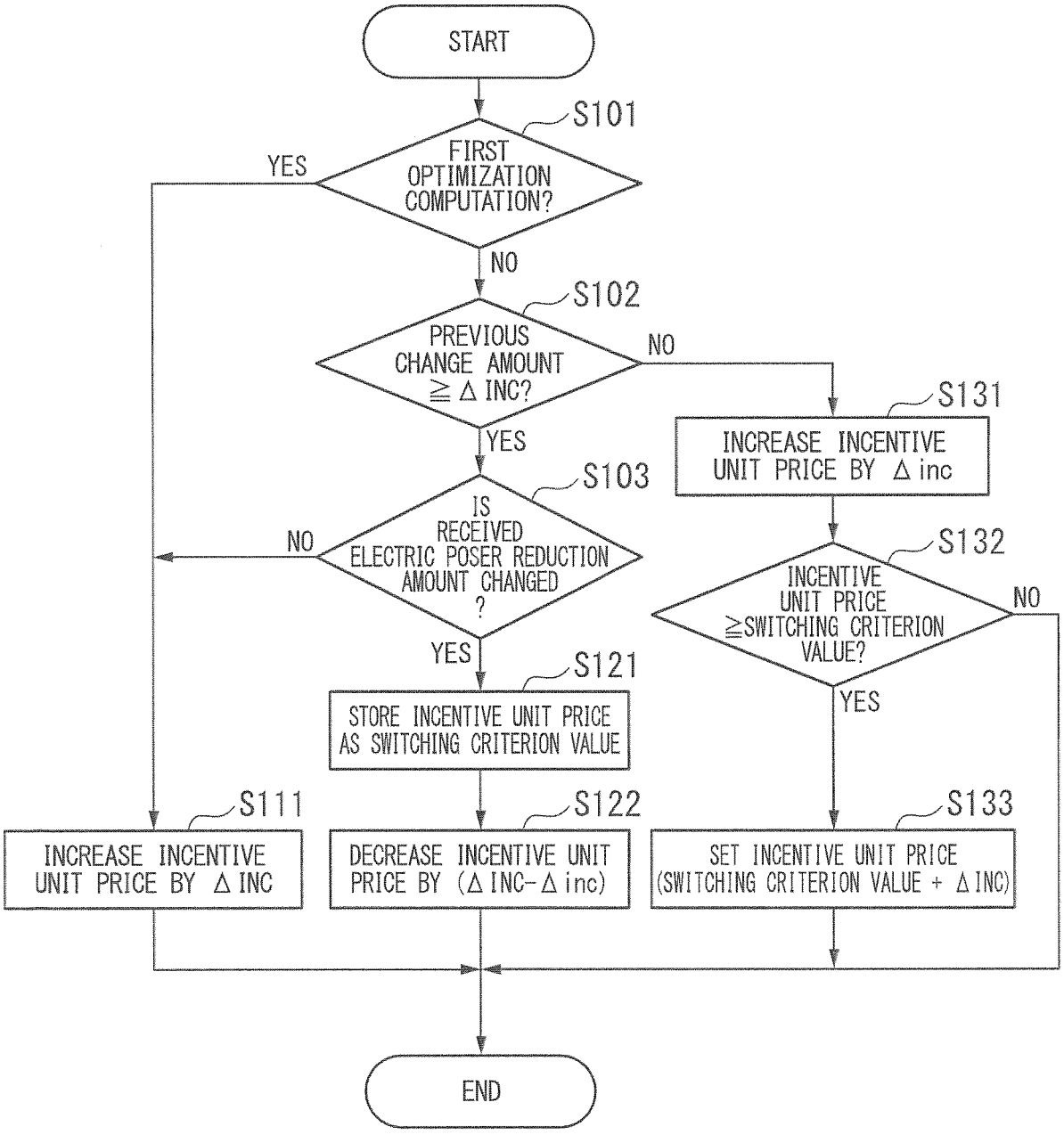

START
S101
FIRST OPTIMIZATION COMPUTATION?
YES
NO
S102
PREVIOUS CHANGE AMOUNT ≧ Δ INC?
NO
YES
S131
INCREASE INCENTIVE UNIT PRICE BY Δ inc
S103
IS RECEIVED ELECTRIC POSER REDUCTION AMOUNT CHANGED ?
NO
YES
S132
INCENTIVE UNIT PRICE ≧SWITCHING CRITERION VALUE?
NO
YES
S121
STORE INCENTIVE UNIT PRICE AS SWITCHING CRITERION VALUE
S111
INCREASE INCENTIVE UNIT PRICE BY Δ INC
S122
DECREASE INCENTIVE UNIT PRICE BY (Δ INC-Δ inc)
S133
SET INCENTIVE UNIT PRICE (SWITCHING CRITERION VALUE + Δ INC)
END

FIG. 9

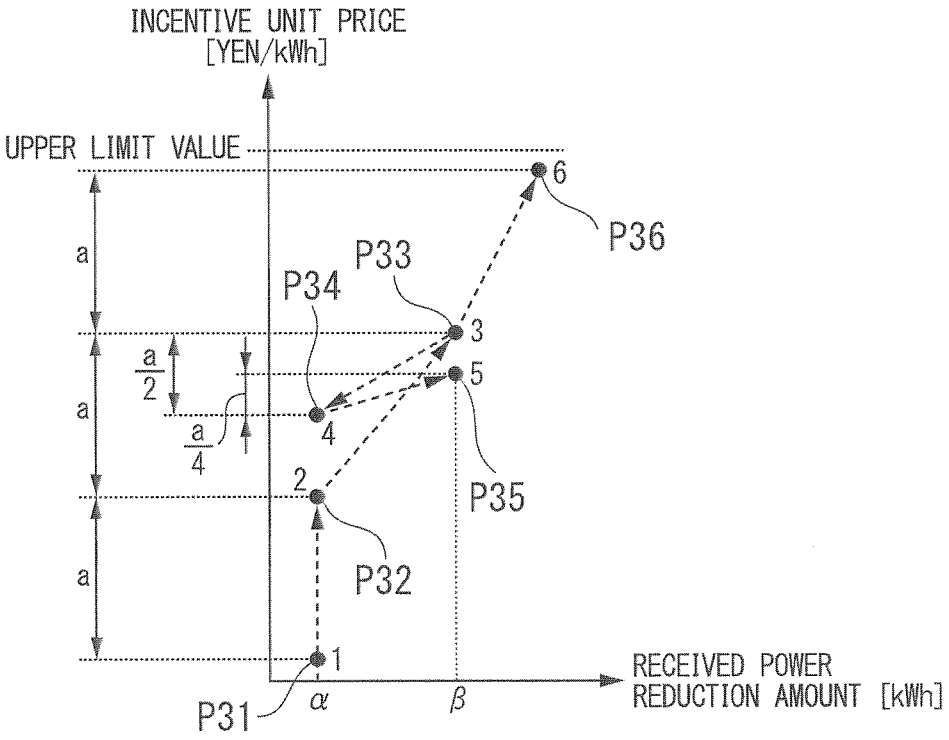

INCENTIVE UNIT PRICE
[YEN/kWh]
UPPER LIMIT VALUE
a
a
a
a/2
a/4
1
2
3
4
5
6
P31
P32
P33
P34
P35
P36
α
β
RECEIVED POWER
REDUCTION AMOUNT [kWh]

FIG. 10

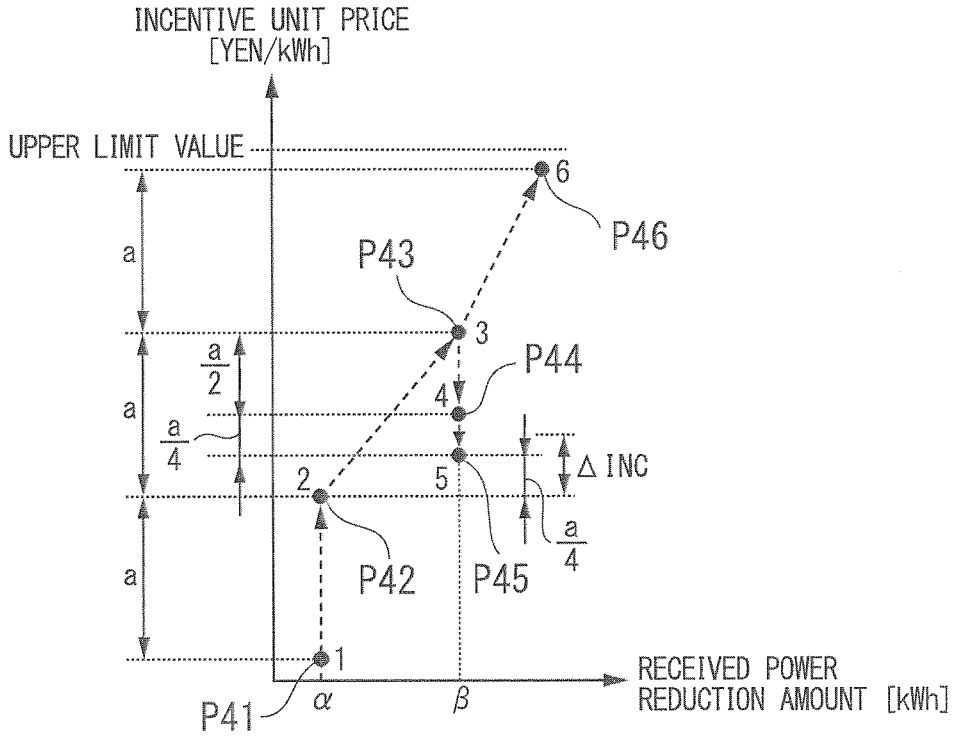

INCENTIVE UNIT PRICE
[YEN/kWh]
UPPER LIMIT VALUE
a
a
a
a/2
a/4
1
2
3
4
5
6
P41
P42
P43
P44
P45
P46
ΔINC
a/4
α
β
RECEIVED POWER
REDUCTION AMOUNT [kWh]

FIG. 11

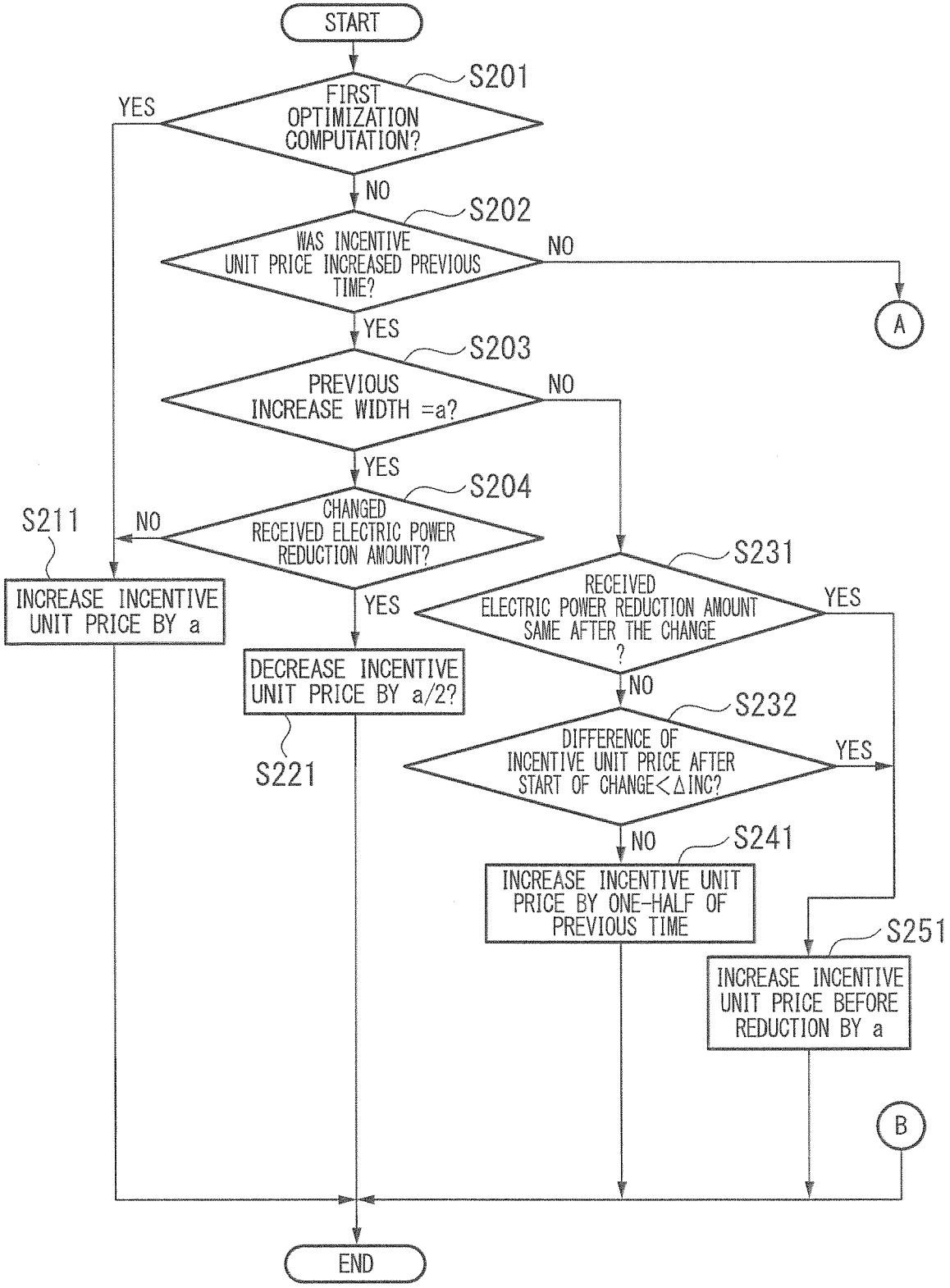

START
S201
FIRST OPTIMIZATION COMPUTATION?
YES
NO
S202
WAS INCENTIVE UNIT PRICE INCREASED PREVIOUS TIME?
NO
A
YES
S203
PREVIOUS INCREASE WIDTH =a?
NO
YES
S204
CHANGED RECEIVED ELECTRIC POWER REDUCTION AMOUNT?
S211
NO
YES
INCREASE INCENTIVE UNIT PRICE BY a
DECREASE INCENTIVE UNIT PRICE BY a/2?
S221
S231
RECEIVED ELECTRIC POWER REDUCTION AMOUNT SAME AFTER THE CHANGE ?
YES
NO
S232
DIFFERENCE OF INCENTIVE UNIT PRICE AFTER START OF CHANGE<ΔINC?
YES
NO
S241
INCREASE INCENTIVE UNIT PRICE BY ONE-HALF OF PREVIOUS TIME
S251
INCREASE INCENTIVE UNIT PRICE BEFORE REDUCTION BY a
B
END

FIG. 12

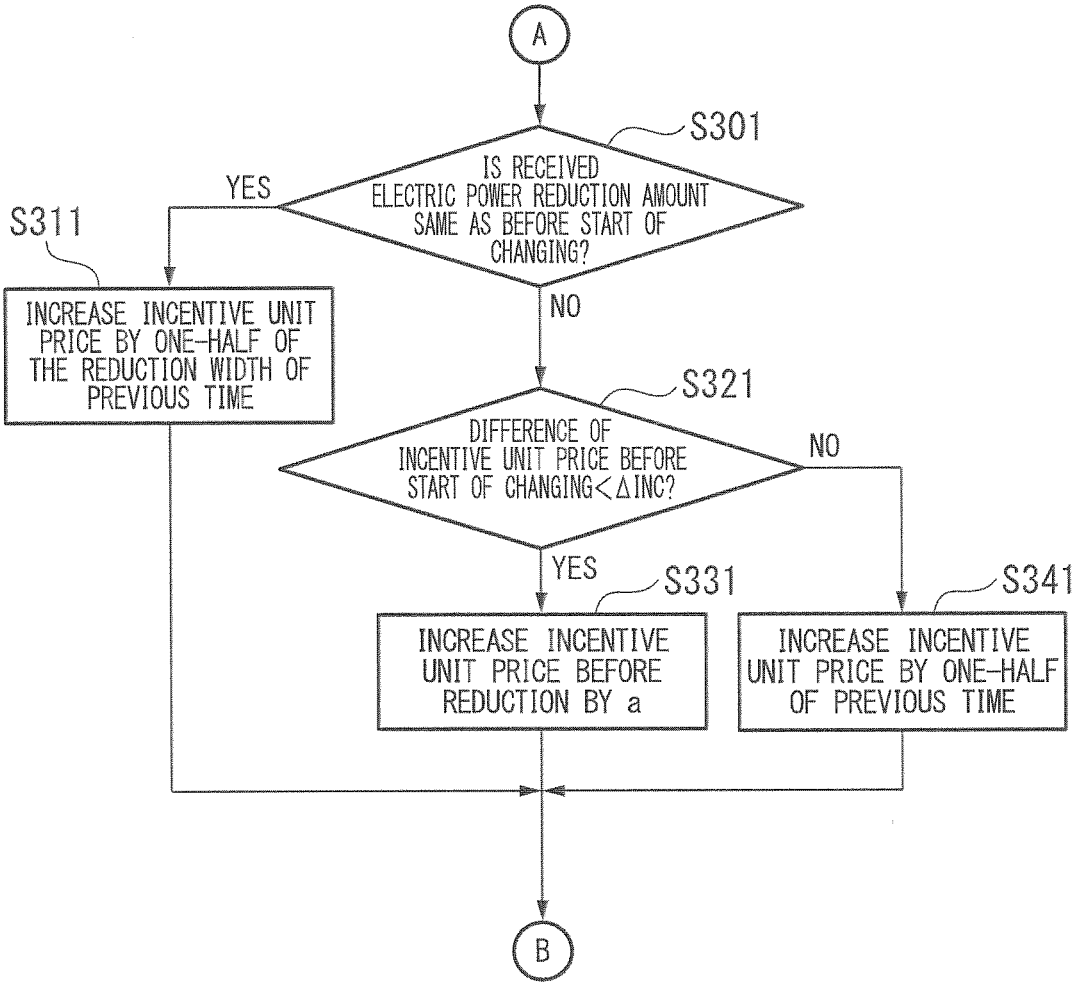

A
S301
IS RECEIVED ELECTRIC POWER REDUCTION AMOUNT SAME AS BEFORE START OF CHANGING?
YES
S311
INCREASE INCENTIVE UNIT PRICE BY ONE-HALF OF THE REDUCTION WIDTH OF PREVIOUS TIME
NO
S321
DIFFERENCE OF INCENTIVE UNIT PRICE BEFORE START OF CHANGING<ΔINC?
NO
YES
S331
INCREASE INCENTIVE UNIT PRICE BEFORE REDUCTION BY a
S341
INCREASE INCENTIVE UNIT PRICE BY ONE-HALF OF PREVIOUS TIME
B

FIG. 13

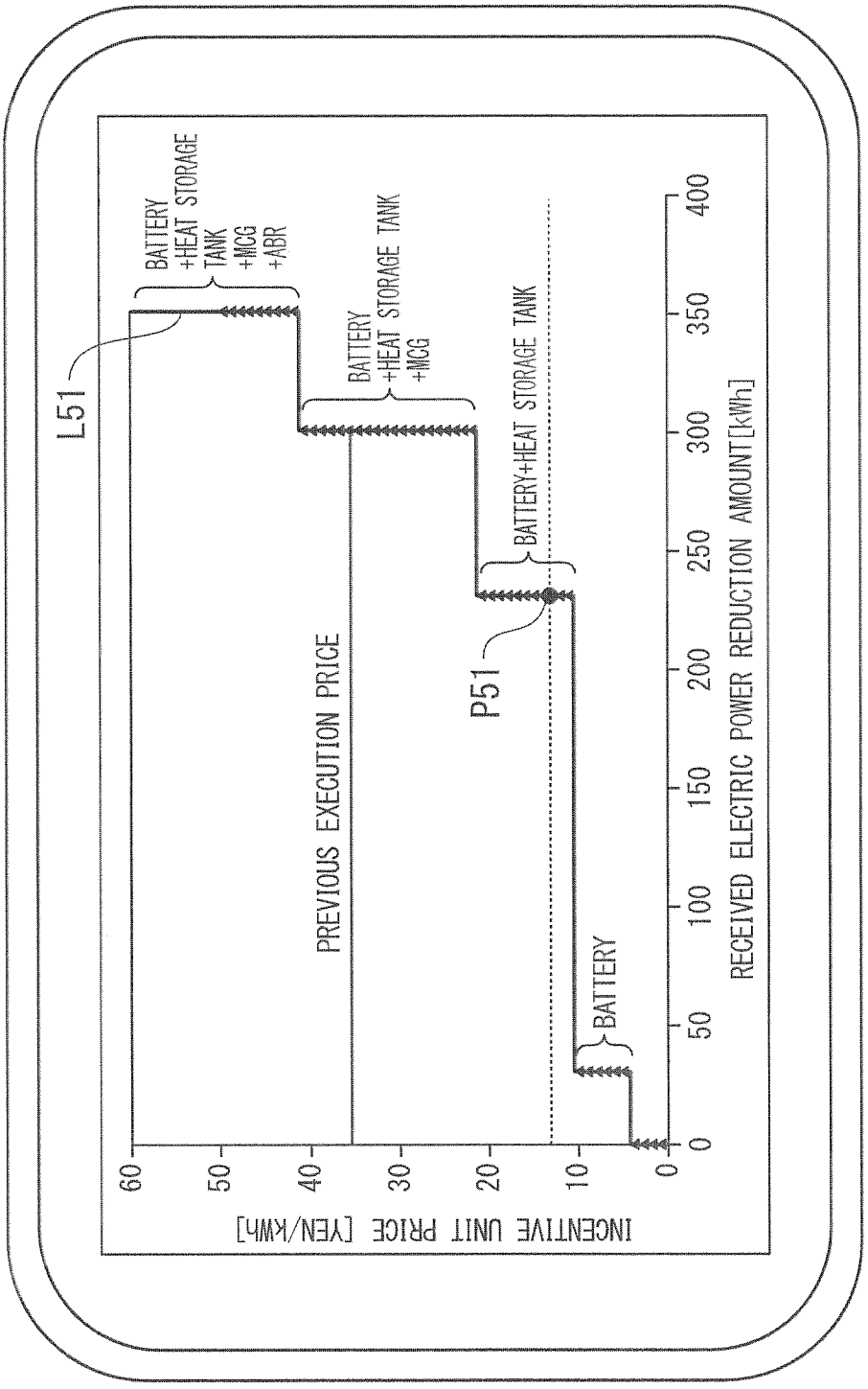

INCENTIVE UNIT PRICE [YEN/KWh]
60
50
40
30
20
10
0
0
50
100
150
200
250
300
350
400
RECEIVED ELECTRIC POWER REDUCTION AMOUNT[KWh]
L51
BATTERY +HEAT STORAGE TANK +MCG +ABR
BATTERY +HEAT STORAGE TANK +MCG
PREVIOUS EXECUTION PRICE
BATTERY+HEAT STORAGE TANK
P51
BATTERY

FIG. 14

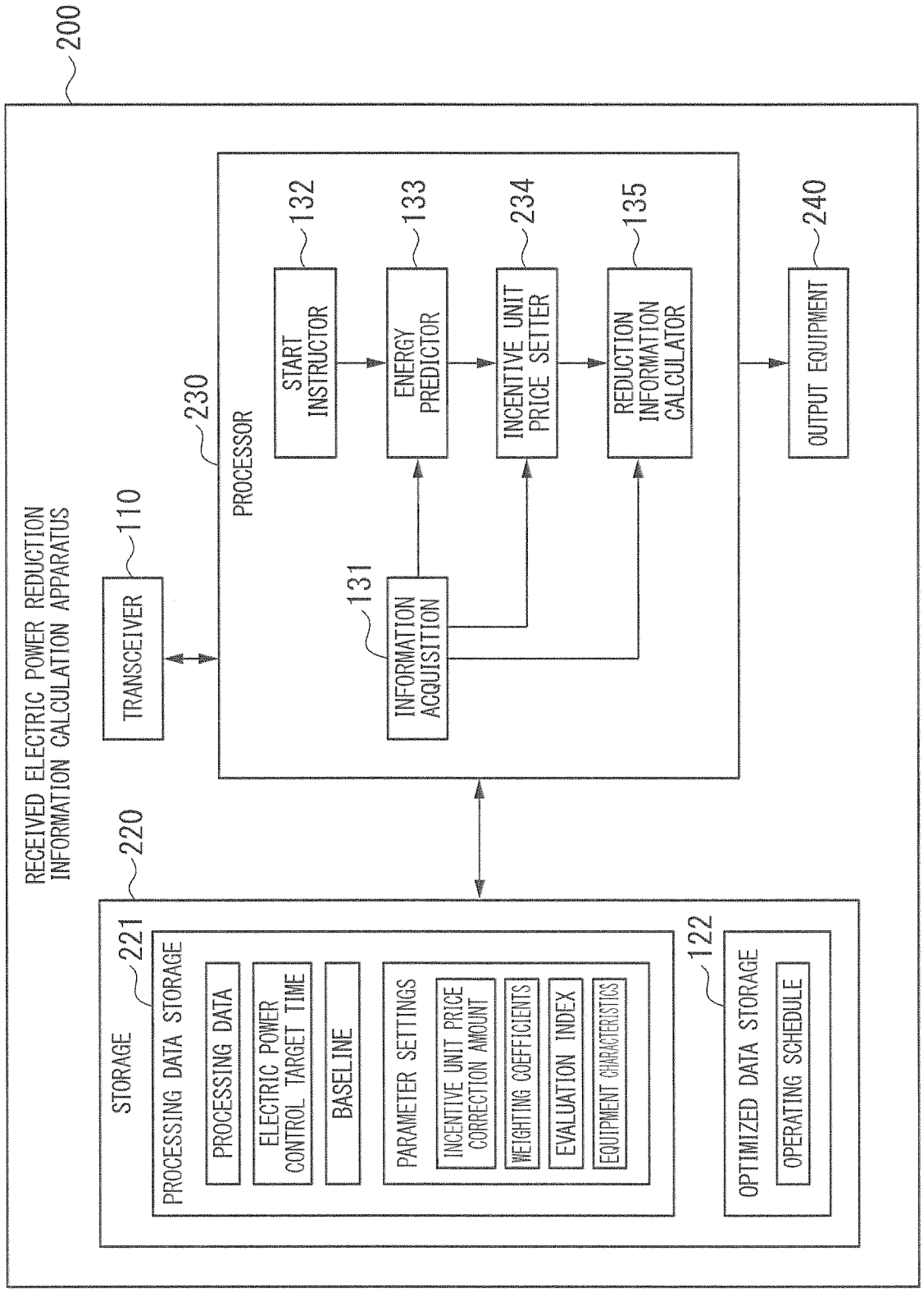

200
RECEIVED ELECTRIC POWER REDUCTION INFORMATION CALCULATION APPARATUS
110
TRANSCEIVER
230
PROCESSOR
131
INFORMATION ACQUISITION
132
START INSTRUCTOR
133
ENERGY PREDICTOR
234
INCENTIVE UNIT PRICE SETTER
135
REDUCTION INFORMATION CALCULATOR
240
OUTPUT EQUIPMENT
220
STORAGE
221
PROCESSING DATA STORAGE
PROCESSING DATA
ELECTRIC POWER CONTROL TARGET TIME
BASELINE
PARAMETER SETTINGS
INCENTIVE UNIT PRICE CORRECTION AMOUNT
WEIGHTING COEFFICIENTS
EVALUATION INDEX
EQUIPMENT CHARACTERISTICS
122
OPTIMIZED DATA STORAGE
OPERATING SCHEDULE

FIG. 15

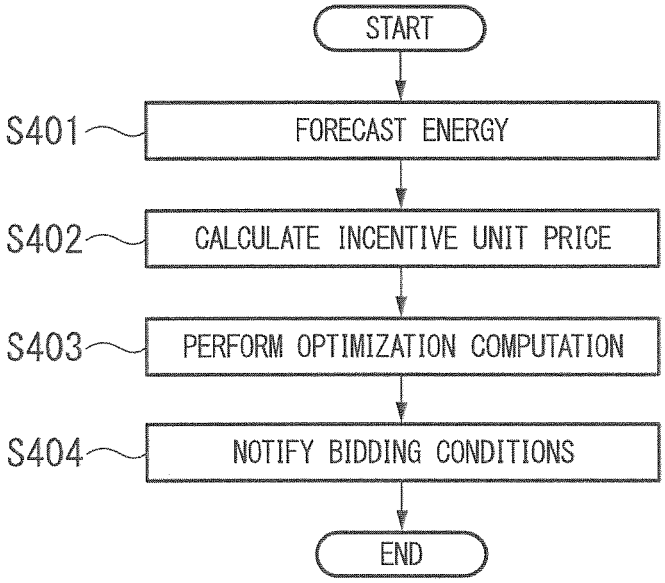

START
S401
FORECAST ENERGY
S402
CALCULATE INCENTIVE UNIT PRICE
S403
PERFORM OPTIMIZATION COMPUTATION
S404
NOTIFY BIDDING CONDITIONS
END

FIG. 16

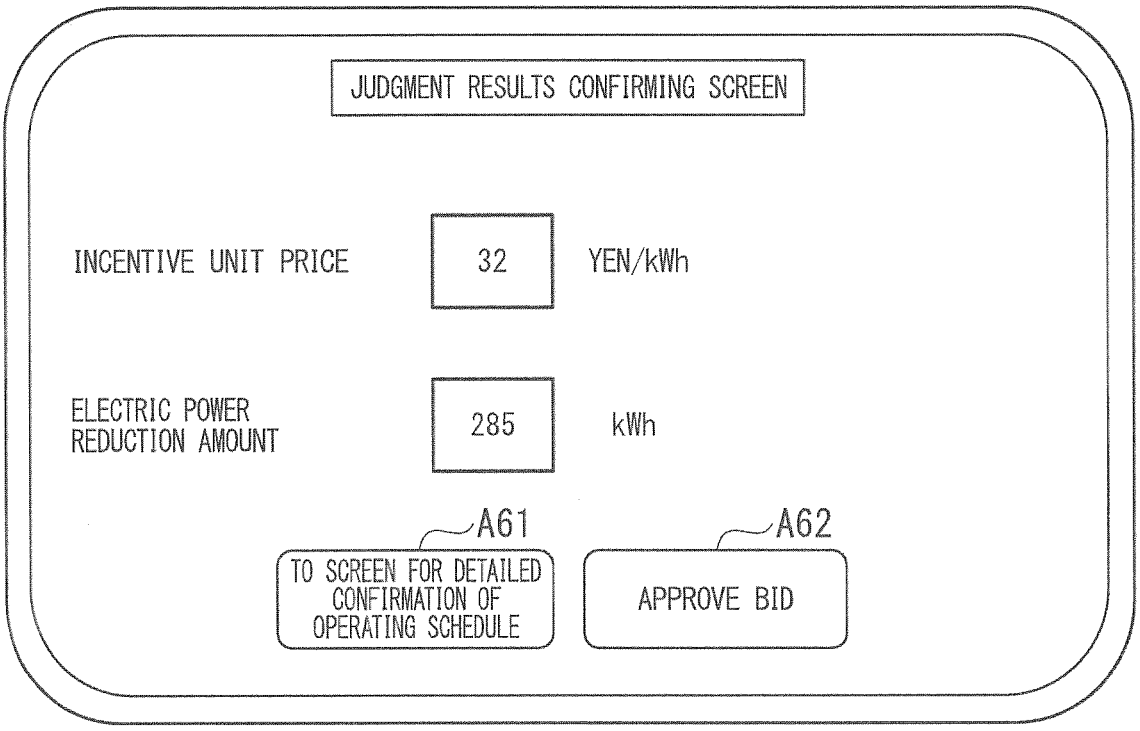
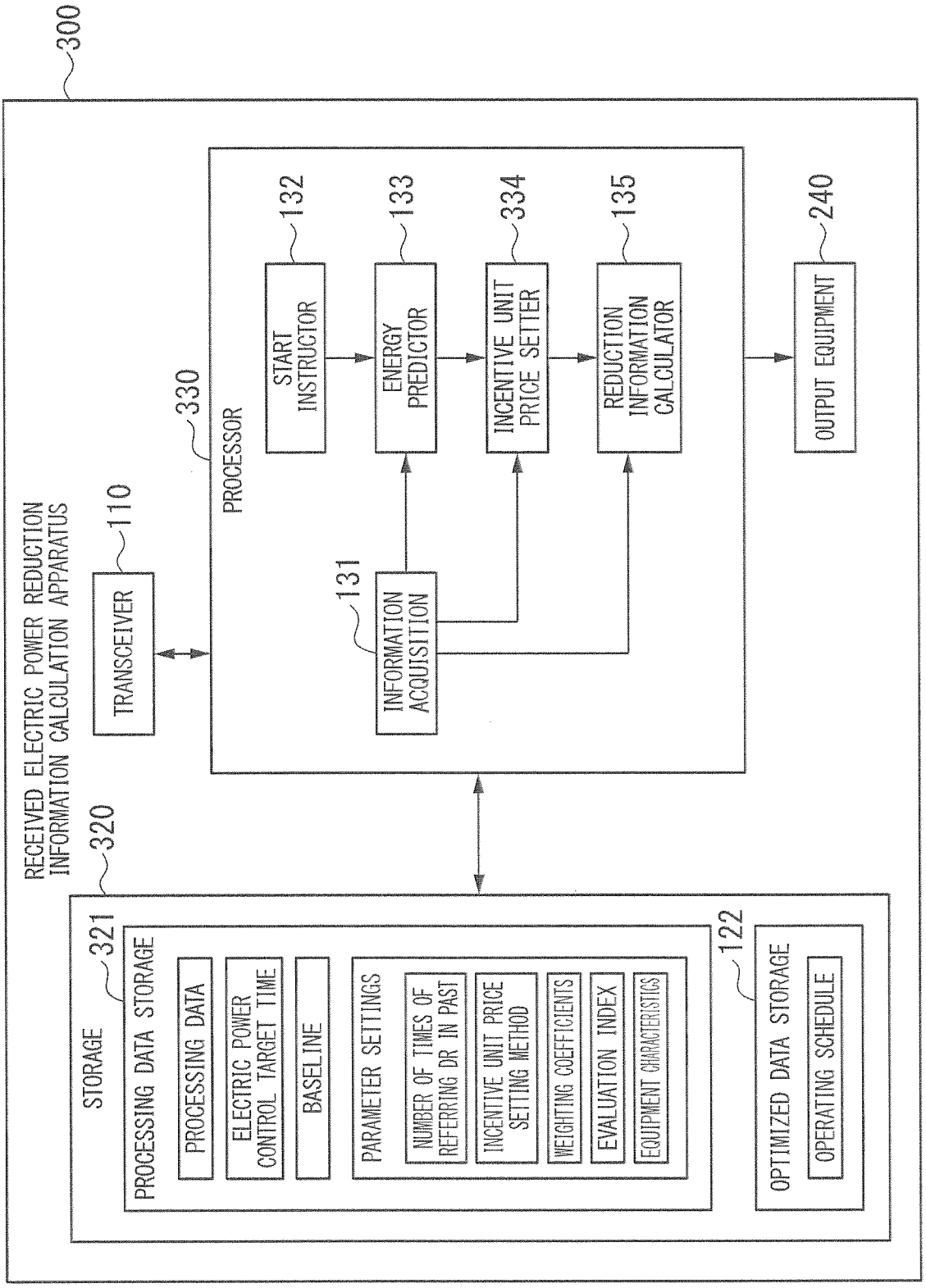

JUDGMENT RESULTS CONFIRMING SCREEN
INCENTIVE UNIT PRICE
32
YEN/kWh
ELECTRIC POWER REDUCTION AMOUNT
285
kWh
A61
TO SCREEN FOR DETAILED CONFIRMATION OF OPERATING SCHEDULE
A62
APPROVE BID

FIG. 17


300
RECEIVED ELECTRIC POWER REDUCTION INFORMATION CALCULATION APPARATUS
110
TRANSCEIVER
330
PROCESSOR
131
INFORMATION ACQUISITION
132
START INSTRUCTOR
133
ENERGY PREDICTOR
334
INCENTIVE UNIT PRICE SETTER
135
REDUCTION INFORMATION CALCULATOR
240
OUTPUT EQUIPMENT
320
STORAGE
321
PROCESSING DATA STORAGE
PROCESSING DATA
ELECTRIC POWER CONTROL TARGET TIME
BASELINE
PARAMETER SETTINGS
NUMBER OF TIMES OF REFERRING DR IN PAST
INCENTIVE UNIT PRICE SETTING METHOD
WEIGHTING COEFFICIENTS
EVALUATION INDEX
EQUIPMENT CHARACTERISTICS
122
OPTIMIZED DATA STORAGE
OPERATING SCHEDULE