

Title (en)  
HEAT PUMP WATER HEATER UNIT AND CONTROL METHOD AND DEVICE THEREOF

Title (de)  
WÄRMEPUMPENWASSERERHITZER SOWIE STEUERUNGSVERFAHREN UND -VORRICHTUNG DAFÜR

Title (fr)  
ENSEMBLE CHAUFFE-EAU À POMPE À CHALEUR ET PROCÉDÉ ET DISPOSITIF DE COMMANDE ASSOCIÉS

Publication  
**EP 3537059 A1 20190911 (EN)**

Application  
**EP 16920873 A 20161114**

Priority  
• CN 201610973365 A 20161103  
• CN 2016105771 W 20161114

Abstract (en)  
Disclosed are a heat pump water heater unit and a control method and device thereof. The method comprises the following steps: after receiving an off-peak electricity signal, obtaining the water temperature of a water tank (30); if the water temperature is lower than a set temperature, controlling a heat pump main machine (10) to be in a turned-on state; calculating the time needed for the water temperature of the water tank (30) to rise by a first pre-set temperature every time when the heat pump main machine (10) and an electric auxiliary heater (20) are turned on at the same time as every other first pre-set time, and recording the time as a first time; and if the first time is less than a second pre-set time, controlling the electric auxiliary heater (20) to be in a turned-on state. In the method, turning on of the electric auxiliary heater (20) is controlled according to a time that is calculated in real time and needed for the temperature of the water tank (30) to rise by a pre-set temperature every time when the heat pump main machine (10) and the electric auxiliary heater (20) are turned on at the same time, thus not only the purpose of saving energy can be achieved, but also the requirement of a user for the water temperature can be satisfied.

IPC 8 full level  
**F24H 9/20** (2006.01); **F24H 4/02** (2006.01)

CPC (source: CN EP US)  
**F24H 4/04** (2013.01 - EP); **F24H 9/2007** (2013.01 - CN); **F24H 9/2021** (2013.01 - CN EP US); **F24H 15/174** (2022.01 - CN EP US);  
**F24H 15/223** (2022.01 - CN EP US); **F24H 15/37** (2022.01 - CN EP US); **F24H 15/375** (2022.01 - CN EP US); **F24H 15/176** (2022.01 - CN EP US)

Cited by  
CN115327888A; CN113418298A

Designated contracting state (EPC)  
AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR

Designated extension state (EPC)  
BA ME

DOCDB simple family (publication)  
**EP 3537059 A1 20190911**; **EP 3537059 A4 20191023**; **EP 3537059 B1 20200527**; CN 106500345 A 20170315; CN 106500345 B 20190503;  
WO 2018082115 A1 20180511

DOCDB simple family (application)  
**EP 16920873 A 20161114**; CN 2016105771 W 20161114; CN 201610973365 A 20161103